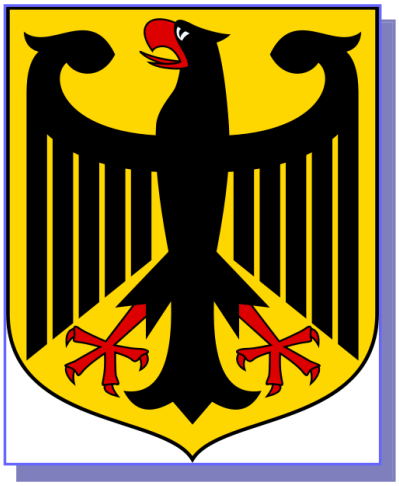
Министерство здравоохранения России
ФГБОУ ВО Амурская Государственная Медицинская Академия
Студенческоенаучноеобщество

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



СБОРНИК ТЕЗИСОВ ДОКЛАДОВ

31я НАУЧНАЯ СТУДЕНЧЕСКАЯ КОНФЕРЕНЦИЯ НА ИНОСТРАННЫХ ЯЗЫКАХ

ABSTRACTS

31th SCIENTIFIC STUDENTS CONFERENCE IN FOREIGN LANGUAGES

13 декабря 2021 г.

БЛАГОВЕЩЕНСК 2021 г.


СНО
АКАДЕМИЯ

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Сборник тезисов докладов 31ойнаучной студенческой конференции на иностранных языках содержит тезисы 253 докладов, заслушанных на трёх секциях:

- Английского языка
- Немецкого языка
- Французского и латинского языков

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

Section of the English Language

СЕКЦИЯ АНГЛИЙСКОГО ЯЗЫКА

Руководитель секции: старший преподаватель Волосенкова Е.А.
Председатель: Конев А.
Секретарь: Глотова Д.

RAPID RESPONSE, PRECISE CONTROL, SOLIDARITY: CHINA'S EXPERIENCE IN FIGHTING THE PANDEMIC

Li Yanliang
Heilongjiang University of Traditional Chinese Medicine

China took effective preventive and control measures to contain the massive spread of the epidemic in early 2020, strongly safeguarding the people's right to life and surviving the most dangerous phase. Since then, in the event of an infrequent pandemic, China has continued to innovate and introduce epidemic prevention and control measures, including large-scale PCR testing, health code, and trip management, and joint Chinese and Western medicine treatment. China's insistence on precise prevention and control and dynamic covid clearance has provided a viable means of prevention and control in the post-covid era.

TRANSITIONS OF JAPANESE ECONOMY AND FASHION AND THEIR RELATIONSHIP

Sakura Okada
Osaka Medical and Pharmaceutical University

The presentation is devoted to the relationship of economy and fashion in Japan and their changes within 1950-th up to nowadays.

RABIES DEFINITION

Miao Qianqian
Heilongjiang University of Traditional Chinese Medicine

Rabies is a frequently fatal, acute viral infection which is transmitted to humans by infected animals often dogs or bats via a bite or by the exposure of broken skin to an infected animal's saliva. Rabies is transmitted by infected saliva that enters the body through a bite wound or other open wound. The virus travels from the wound along nerve pathways to the brain, where it causes inflammation irritation and swelling with presence of extra immune cells that results in the symptoms of the disease.

CHINA'S CONTROL OF COVID-19

Yang Jing

The main introduction is about the speed of control and measures and countermeasures of the epidemic in China during the serious period of the epidemic.

Heilongjiang University of Traditional Chinese Medicine

WE ARE ALL FIGHTERS

Wang Binghao
Heilongjiang University of Traditional Chinese Medicine

This is a war without smoke. And we are all fighters. To the fighters.

CONCERTED EFFORTS FOR FIGHTING AGAINST THE EPIDEMIC

Zhang Zeqing
Heilongjiang University of Traditional Chinese Medicine

This report mainly expounds the achievements made in the prevention and control of COVID-19 epidemic in China, the specific measures to successfully control the COVID-19 epidemic of infectious diseases, and the outlook for the future.

EAST MEETS WEST TO FIGHT COVID-19

Zhang Ying
Heilongjiang University of Traditional Chinese Medicine

TCM has played an important role in the fight against COVID-19. The "three drugs and three parties" have made unique contributions to the rapid containment of COVID-19. Integrated traditional Chinese and Western medicine treatment has unique advantages.

DEPRESSION

Xiao Yuqing

Depression, also known as depressive disorder, is characterized by significant and lasting depression, and is the main type of psychological disorder?

The cause of depression is not very clear, but it is certain that many factors such as biological, psychological and social environment are involved in the process of depression. Generally speaking, it is more likely to suffer from depression under long-term psychological stress. There are many celebrities who have committed suicide, such as Van Gogh, Hemingway, Sanmao, Leslie Cheung, etc. It may seem that they are no different from ordinary people, but their heart is rough.

The main manifestations of depression include five types: depression, mental retardation, reduced will activity, cognitive impairment, and some physical symptoms. Examination of patients with suspected depression should be based on a comprehensive physical examination in addition to the above performance judgment. With nerve tests?

There are three main treatments for depression: drug therapy? Psychological therapy and physical therapy?

TO THE FOUNDATION OF THE AMUR STATE MEDICAL ACADEMY

Volkova Yu. – the 1st year student
Supervisors: O.I. Katina

The Amur State Medical Academy was founded **on August 1, 1952** due to an order of the Council of Ministers of the USSR issued on June 23, 1952. It was an extremely difficult period, when the buildings of the institute and dormitories were simultaneously erected, they were equipped with modern technologies, and a teaching staff being engaged in both teaching and scientific activities was

formed. **Boris Nikolayevich Anfimov** became the first rector of **the Blagoveshchensk State Medical Institute** (BSMI). Due to various everyday circumstances, as well as in the direction of the Ministry of Health, mature specialists came to Blagoveshchensk. They were ready to share their professional experience with students, to serve as an example for future doctors. It was the first teachers of the BSMI that laid the foundation on which the BSMI (now the Amur State Medical Academy) became one of the best medical universities in the country.

In the early 60s, associate professor **Magomet Kertibievich Nadgeriev** became the **rector of the BSMI**. He put a lot of effort into the qualitative improvement of the material base of the institute, strengthening the teaching staff potential, attracting new specialists, opening research clinical centers.

Professor **Yaroslav Petrovich Kulik**, a young cardiac surgeon from Smolensk, created a specialized cardiac surgery service in 1975. He began to perform surgical correction of congenital and acquired heart defects. The cardiac surgery clinic has started operations with the use of artificial circulation. Surgical aids for circulatory support have been developed for the treatment of patients with acute heart failure. At present, the clinic is equipped with advanced techniques for performing cardiac, arhythmological, endovascular and vascular surgeries.

Graduates of the Tomsk Medical Institute, spouses - Professors **Landyshevs - Iraida Vasilievna and Yuri Sergeevich**, created their own scientific schools of cardiologists and pulmonologists and scientific directions at BSMI.

Professor **Vladimir Yakovlevich Protasov** is the founder of his own scientific and pedagogical school of anatomists. Vladimir Yakovlevich donated his personal scientific library to the BSMI.

Professor **Petr Yakovlevich Grigoriev**, who headed the Department of Faculty Therapy, became the next rector of BSMI. The Institute developed at a rapid pace. By 1971, 15 doctoral and 78 master's theses were successfully defended! This was facilitated by the already established scientific directions, the developing scientific schools, the opening research centers - cardiac surgery, gastroenterology, proctology; cardiopulmonary direction with diagnostic, medical, rehabilitation and dispensary services; creation of a new oncology course, most important for all profiles of medicine at the Blagoveshchensk State Medical Institute.

Professor **Mikhail Timofeevich Lutsenko**, a graduate of the Stavropol Medical Institute, a social activist who came to Blagoveshchensk after graduating from higher school, has gone all the steps of the career ladder from assistant to rector of BSMI.

From 1986 to 2011, the university was headed by a Far Eastern resident, a graduate of the Blagoveshchensk State Medical Institute, Professor **Vladimir Anatolyevich Dorovskikh**. In the 1980s, methodological teaching systems were formed and improved especially intensively in theoretical and clinical department teams. The university graduated annually up to 500 young specialists, they worked in different regions and territories of the USSR, and the institute had no complaints: the quality of the training of doctors corresponded to the high union standards.

In 1996, BSMI was transformed into the **Amur State Medical Academy** (ASMA) and accepted into the Association of European Medical Schools, which made it possible to unify the training of doctors with European standards.

In May 2011, by the general meeting of the working staff of the Amur State Medical Academy, Doctor of Medical Sciences, Professor **Tatyana Vladimirovna Zabolotskikh** was elected the rector of the Academy. And being re-elected three times she is still the rector of the Amur State Medical Academy.

Academy has a powerful educational process nowadays. To ensure the educational process, an electronic information and educational environment has been formed and is developing, an integral

part of which is the electronic library of the Amur State Medical Academy, which provides access to the main and additional literature declared in the work programs, to professional databases, information reference and search systems, as well as other information resources. It is well known that to be competitive specialists you need to follow the latest research and scientific achievements. All of them are given in numerous international editions, conferences, symposia, etc. Modern specialist should easily communicate in a foreign language to keep up with the latest medical news. And the chair of Foreign Languages takes an important role in training such specialists.

Also, ASMA takes part in international cooperation. International scientific cooperation of the Amur State Medical Academy began long ago. In 1963 prof. K.A. Meshcherskaya took part in the work of the 2nd International Pharmacological Congress in Czechoslovakia. To the same country, at the invitation of the Academy of Sciences of Czechoslovakia, in order to exchange achievements in the field of cardiac surgery, he twice traveled in 1969-1972. prof. Kulik with his students. During the second trip, prof. Kulik and Associate Professor Sudakov were awarded the Jan Purkinje Academic Silver Medal. Within the framework of the international activities of the Amur State Medical Academy, several agreements were concluded.

Today, many professors of the academy are full members of international scientific academies: the International Academy of Medicine. Albert Schweitzer, International New York Academy, International Slavic Academy of Sciences, Education, Arts and Culture, Pacific International Medical Academy, etc. Prof. V. A. Dorovskikh was an honorary professor at Osaka Medical University and Harbin University of Traditional Chinese Medicine. Prof. E. A. Borodin and associate professors O. V. Lysenko and T. A. Gudkina were awarded professors' diplomas with the right to visit, lecture, and conduct scientific research at the Osaka Medical University. Professors from Japan, China and Poland were honored with diplomas of honorary professors of the Amur State Medical Academy.

We can't help mentioning about the Accredetation and Stimulation Center of the Amur State medical Academy. It was established possible to conduct training on its basis for students, residents, doctors of various specialties and the civilian population. The center is equipped with modern expert class simulators and simulators that simulate the entire spectrum of diseases. ASC was awarded the II accreditation level.

The Amur State Medical Academy was one of the first educational establishments that established Students Self-Government Center in 2006. Participation in the activity of the Center gives the possibility to develop and realize the creative, scientific and sport potential of students. Students of the ASMA take an active part in competitions of various directions.

Today, one of the main missions of ASMA is the high-quality training of qualified medical personnel for the regions of the Far East and the Asia-Pacific basin, the implementation of fundamental and applied research and training on their basis of highly qualified personnel, ensuring the educational process of youth and social protection of students and staff of the Academy. Providing decent learning and working conditions for all members of the academic community. Creation in the academy of conditions for self-realization and self-improvement for all participants in the scientific and educational process in the interests of the individual, society, state and university.

NEURON TRANSPLANTATION

Olkhovskaya E. – the 3rd year student
Supervisors: Doc.Med.Sc., prof. V.V. Grebenyuk, O.I. Katina

Relevance: Neurodegenerative diseases such as Alzheimer's or Parkinson's disease, strokes, traumatic brain injuries occur annually in millions of people, accompanied by cell death and brain inflammation. Such patients often suffer from memory impairment, and are also at risk of developing

epilepsy. Injuries lead to the loss of nerve cells and, accordingly, the organ function that these cells performed. The ability of the brain of adult mammals, including humans, to compensate for these losses is very limited. Therefore, scientists are exploring the possibilities of transplanting nerve cells, replacing lost neurons with new ones.

Objective: To determine the possibility of integrating transplanted neurons into existing neural networks.

Own research: A retrospective analysis of transplant operations from 2016 to 2021was conducted. A clinical example of a successful result of a neuron transplant is presented: researchers from the University of California at Irvine transplanted embryonic progenitor cells capable of generating inhibitory insertion neurons - a special type of nerve cells controlling the activity of brain circuits, into the brains of mice after traumatic brain injury. They were supposed to function in the hippocampus that is the area of the brain responsible for learning and memory.

The researchers found that the transplanted neurons migrated to the area of traumatic injury and formed new connections with brain cells, functioning for a long time. In a month, the mice showed signs of improved memory, such as the ability to distinguish the box in which they experienced unpleasant sensations from the one in which there were no unpleasant sensations. These mice coped with memory tests in the same way as mice that had never had a traumatic brain injury. Cell transplants also prevented the development of epilepsy in animals, that affected more than a half of untreated mice.

Inhibitory neurons are critically important in the brain's memory function, and they are extremely vulnerable after a traumatic brain injury. It is impossible to stop the death of neurons, but now it is possible to replace them and restore the connections between them. To test their observations once again, Hunt and his group injected mice with a drug that turned off the transplanted neurons, and their memory problems resumed. This showed that the transplanted neurons were indeed the cause of improved memory. The next step of the group is to create insertion neurons from pluripotent human stem cells.

Conclusion: Thus, the neuron transplantation is very actual problem of modern medicine. The perspective development of this scientific way is evident and the possibility of its implementation is indisputable. If the results on mice can be reproduced in humans, it may be very useful for patients who have suffered a traumatic brain injury, stroke, and patients with neurodegenerative diseases.

ALGORITHM AND APPLICATION OF PCR

Trubnikova A. – the 2nd year student
Supervisors: prof., Doc. Med. Sc. E.A. Borodin, O.I.Katina

1. Polymerase chain reaction (PCR) is an experimental method of molecular biology that allows getting a significant increase in low concentrations of certain nucleic acid fragments (NCs) in a biological material (sample).

2. PCR is a highly accurate diagnostic method and one of the most important discoveries in the field of biology in recent decades. PCR analysis has been in use for almost 40 years and is considered to be the most accurate and sensitive way to diagnose infectious diseases.

3. PCR is a unique and versatile method. The test is used not only in clinical laboratory diagnostics, but also in biology, forensic science, archeology, molecular sexing and many other scientific fields.

4. Polymerase chain reaction (PCR) was invented in 1983 by the American biochemist Carey Mullis.

5. The method is based on multiple selective copying of a specific region of the DNA nucleic acid using enzymes under artificial conditions (in vitro). Also it is based on the detection of even small concentrations of the desired diagnostic element.

6. To carry out PCR in the simplest case, the following components are required: DNA template, Two primer, Thermostable DNA polymerase (enzyme), Polymerase Deoxyribonucleosidetriphosphates (dATP, dGTP, dCTP, dTTP). Mg2 + ions, Buffer solution.

7. When carrying out PCR, 20-35 cycles are performed. Each consists of three stages.

8. The principle of the PCR method consists in amplification - numerous, millions of times, multiplication of regions of a specific DNA sequence in a test tube microvolume with a cyclic recurrence of three reaction stages. Each takes place in a different temperature regime.

9. The discovery of the PCR method is one of the most outstanding developments in the field of molecular biology in recent decades. This made it possible to raise medical diagnostics to a qualitatively new level.

UTERINE MALFORMATIONS AND THEIR SIGNIFICANCE IN SURGERY

Maznyak I.- 2nd year student
Supervisors: Cand.Med. Sc., assoc.prof. S.S.Selivyorstov, O.I.Katina

Uterine malformations are changes in the location, shape, size, or proportions of an organ occurring as a result of developmental disorders in the prenatal period. It is often accompanied by functional disorders of the reproductive system and can be combined with malformations of other genitals. Infertility, miscarriage and pregnancy complications are possible. In some cases, uterine malformations are asymptomatic.

Classification of malformations of the uterus and vagina:

I class. Vaginal aplasia. Aplasia – is a developmental anomaly; congenital absence of any part of the body or organ.
II class. One - horned uterus.
III class. Doubling of the uterus and vagina.
IV class. Bifid uterus.
V class. Intrauterine septum.
VI class. Malformations of the fallopian tubes and ovaries.
VII class. Uncommon forms of genital defects.

Congenital malformations of the female genital organs account for 14% of all congenital defects and take the 3rd place after congenital malformations of the cardiovascular and musculoskeletal systems.

PANCREAS STRUCTURE VARIANTS AND THEIR SURGICAL SIGNIFICANCE

Nelin P. – the 2nd year student
Supervisors: Cand.med.Sc., assoc.prof. S.S.Seliverstov, O.I.Katina

The longitudinal and transverse dimensions of the pancreas are significantly larger in men than in women.

With increasing age of examined persons, a gradual decrease in the quantitative parameters of the organ is noted (minimal - in people over 75 years, maximal - 22-34 years, respectively).

The main feature of the blood supply to the pancreas is the absence of its proper large arteries. Blood is carried to the organ through the branches of the common hepatic, superior mesenteric and splenic arteries.

Despite the high variability, it is customary to distinguish the following pancreatic arteries: superior anterior and posterior duodenal pancreatic arteries, inferior duodenal pancreatic artery and pancreatic branches of the splenic artery (dorsal, great pancreatic artery, caudal, pre-pancreatic, inferior pancreatic artery).

LIVER STRUCTURE VARIANTS AND THEIR SIGNIFICANCE IN SURGERY

Vinokhodova S. – the 2nd year student
Supervisors: Cand.Med.Sc. assoc. prof. S.S. Seliverstov, O.I.Katina

The liver is a vital unpaired internal organ located in the abdominal cavity under the diaphragm and performing a huge number of different functions (barrier, hormonal, detoxification, etc.).

The liver consists of lobules formed by hepatic cells. In its structure, two lobes are usually distinguished: right and left. There are two more secondary lobes in the right lobe: caudate and quadrate.

The anatomical variants of the structure of the liver include: liver inversion, liver rotation, variation in the contours and sizes of lobes, Riedel's lobe, thinning of the left lobe, congenital absence of the left lobe, local hypertrophy of the lobes and segments of the liver, additional grooves, interposition of the colon, etc.

Liver inversion – is the location of the organ in another area of the abdominal cavity (most often in the left hypochondrium) combined with the inversion of other organs of the digestive system.

Liver rotation is a change in its location along one of the axes - long or short.

Riedel's lobe, which is quite common, looks like an outgrowth of the right lobe of the liver, resembling a tongue in shape. It is only a variant of the anatomical structure, and not a true accessory lobe. It is more common seen in women. Riedel's lobe is detected as a mobile formation in the right side of the abdomen, displacing with inspiration along with the diaphragm.

The classification of liver operations is based both on taking into account the segmental structure of the liver, and the nature of the operations: removal of one segment, several segments, part of a lobe and a whole lobe.

DOCTORS ARE CRIMINALS: HISTORY LESSONS

Mazur Y.O–the 3rd year student
Supervisors: Cand. Phil.Sc. T.V. Gerasimova, O.I. Katina

The problem of experiments on human was treated differently in different epochs. For example, in the second half of the XIX century, the French physiologist Claude Bernard believed that science, first of all, should respect life. Therefore, if the patient agrees to conduct an experiment on him, then the doctor should refuse, as the outcome may be deplorable. But the German scientist of the same time Albert Moll had a different point of view. He believed that medical science is constantly evolving, and for this a doctor should try new methods of treatment, that is, experiment.

During the Second World War, research on people began to gain popularity and increased to the top among German doctors. The Nazi experiments were a series of medical experiments on a large number of prisoners, including children. Inhuman things happened in concentration camps. These "doctors" infected prisoners with gas gangrene, infectious jaundice, malaria, tetanus, typhus and many other super-dangerous diseases.

They also dealt with the problems of organ transplantation. To do this, fascist doctors with Olympic calmness took eyeballs, auricles from living children. And also they transplanted bones, removing them from prisoners at their discretion.

The odious one was Dr. Josef Mengele (also known as the "Angel of Death"). He was interested in the twins. He separated them from the rest of the prisoners upon their admission to Auschwitz–Auschwitz.

In 1947, the Nuremberg Tribunal took place and the world learned and shuddered at the horrors of such experiments. It was on the basis of the materials of the Nuremberg Tribunal that the Nuremberg Code was developed. It became the first international document describing the principles of behavior of medical experiments on humans. The basic principle of the code is that in order to conduct an experiment on a person, his voluntary informed consent is necessary after providing him with complete information about the nature, duration and purpose of the experiment, about the methods and methods of its conduct, about all the alleged inconveniences and dangers associated with the experiment and, finally, the possible consequences for the physical and mental health of the subject that may arise as a result of his participation in the experiment. Later, this code was supplemented by other documents: the Helsinki Declaration of the World Medical Association, the Council of Europe Convention on Biomedicine and Human Rights. On their basis, our country has developed its own documents regulating this problem. Thus, part 2 of Article 21 of the Constitution of the Russian Federation states "No one can be subjected to medical, scientific or other experiments without voluntary consent". Articles 32 and 43 of the Fundamentals of the Laws of the Russian Federation "On the Protection of Citizens' health" establish voluntary consent to any medical intervention. "A necessary precondition for medical intervention is the informed voluntary consent of a citizen" and the voluntary consent of a person to experiments. A citizen has the right to refuse to participate in the study at any stage.

In conclusion, it is worth to say that experiments are necessary for the development of medicine. Without them the progress is impossible. But when conducting them, it is necessary to comply with the legal framework governing these experiments, since the Hippocratic principle of "do no harm" was and remains relevant for medicine.

CLASSIFICATION OF DOPING IN SPORTS AND THE BIOCHEMICAL MECHANISM OF THEIR ACTION

Shevkun D. - the 2nd year student
Supervisors: N.A. Feoktistova, O.I.Katina

Doping is prohibited for use in sports drugs and methods that allow increasing the reserve capabilities of an athlete not at the expense of his natural qualities or training.

Currently, drugs of the following groups are classified as doping agents:

Stimulants (central nervous system stimulants, sympathomimetics, analeptics).
Drugs (narcotic analgesics).
Anabolic steroids and other hormonal anabolizing agents.
Betablockers.
Diuretics.

Depending on the type of sport, they can have completely different actions: from psychostimulating to tranquilizing; from diuretic to cardiotropic effects.

Stimulants - their effect is similar to the effect obtained by the action of adrenaline. They allow to reveal the reserves embedded in an organism. Stimulants blockade them so that at ultra-high exertions the athlete receives his strength from the "inviolable reserve". The use of stimulants can cause an accident occurring with an athlete as a result of an inadequate assessment of the situation. Besides, the misuse of stimulants leads to drug dependence.

Drugs affect the central nervous system and reduce pain, as well as ethyl morphine, codeine and methadone. These drugs increase the pain threshold so much that the athlete cannot recognize how serious the injury is. They cause very rapid and severe addiction.

Anabolic cause accelerated muscle growth and an increase in muscle strength. Unlike stimulants, which allow a person to use the inviolable reserve of the body's forces, anabolics increase these reserves and allow the athlete to withstand physical exertions several times more than usual. However, interference with normal hormonal activity causes harmful side effects, such as the growth of tumors, the manifestation of mental syndromes, hepatic and renal dysfunction.

Beta blockers are a group of drugs acting on the so-called beta-receptors. As a result of the application, the heart rate decreases and an antiarrhythmic effect is caused. Beta blockers are used by athletes to calm down and reduce tremor in sports where precise coordination is needed, such as archery, bullet shooting, diving. At the same time, these drugs increase fatigue and reduce endurance. Diuretics are used for rapid weight loss and improvement of muscle relief in some kinds of sports, such as weightlifting, boxing, wrestling and others. In addition, diuretics are often used in order to reduce the concentration of other prohibited drugs in the urine. This procedure is aimed at concealing the presence of doping in the body and therefore, of course, it is prohibited. Dehydration and muscle cramps are among the consequences of using diuretics.

EARTHQUAKES ON SAKHALIN

Gritsun D., Vyunov M. - the 2nd year students
Supervisors: Cand.Biol.Sc., assoc.prof. L.A. Guba, O.I. Katina

Earthquake is tremors and vibrations of the Earth's surface. According to modern views, earthquakes reflect the process of geological transformation of the planet. Global geological and tectonic forces are considered to be the root cause of earthquakes. But at present their nature is not entirely clear. Earthquakes occur as a result of sudden displacements and rupture in the earth's crust or upper mantle and are transmitted over long distances in the form of elastic vibrations. The point in the earth's crust from which seismic waves radiate is called the earthquake hypocenter. The island is located in a seismically active region on the Chinese tectonic plate. Earthquakes on Sakhalin are quite common. In the last 3 months about 13 tremors have occurred in this region.

FIRES OF YAKUTIA IN 2021

Saidova K., Melisov B. – the 2nd year students
Supervisors: Cand.Biol.Sc., assoc.prof. L.A. Guba, O.I. Katina

Yakutia is traditionally one of the most fire-prone regions of Russia, since most of its territory is occupied by nature, including taiga forests (80% of the land) and tundra. Fires, along with deforestation, bring the greatest losses for the forest: the wind "blows the fire", and animals, birds and plants die in its path.

"According to statistics, a person is guilty in eight out of ten fires occuring in the forest" the Ministry of Emergency Situations informs. The Russian Greenpeace also agrees with this: the head of the organization's fire department, Grigory Kuksin, explained to the BBC that almost all forest fires are caused by people. The main reasons are purposeful burning of grass (from economic or hooligan motives), abandoned cigarette butts and abandoned bonfires.

The reasons of the problem development:

-climate change,
-record heat and drought,
-dry thunderstorms with frequent lightning strikes,

-human factor (unintentional and deliberate arson).

Consequences:

-Forest fires in Yakutia in 2021 are the LARGEST IN the WORLD. The smoke from the fires reached most regions of Eastern Siberia, parts of Western Siberia and even Alaska! The work of many airports in Russia, ferry crossings of Yakutia, was slowed down or paralyzed.

-The number of fires was 1.399, 58 people died, 45 were injured (compared to 2020, the number of deaths increased almost 2 times!).

- Over the past 5 years, the area of fires has increased 5 times! Compared to 2020, in 2021, the area of fires increased by 1.7 times and amounted to almost 8.5 million hectares!

CORONAVIRAL INFECTION IN THE KHABAROVSK KRAI

Toporkov E. – the 2nd year student
Supervisors: Cand.Biol.Sc., assoc.prof. L.A. Guba, O.I. Katina

Coronaviral infection COVID-19 affects different groups of people in various degrees. In most infected people the disease has a mild or moderate form and they do not need hospitalization.

The most common symptoms are: temperature increase, cough, fatigue, loss of smell and taste. Some infected people may also suffer from: sore throat, headache, various other painful sensations, diarrhea, a rash or change of the skin color on the fingers or toes, redness or irritation of the eyes.

VARIANTS OF THE CORONARY ARTERIES STRUCTURE

Shusharin N.- the 2nd year student
Supervisors: Cand. Med. Sc., assoc. prof. S.S. Seliverstov , O.I.Katina

Variants are deviations in the structure within the normal range that do not negatively affect the functions. Sometimes they are progressive in nature.

The right and left coronary arteries are isolated. They originate from the ascending part of the aorta just above the aortic valve and bend the heart locating in the adipose tissue directly under the epicardium.

The right coronary artery originates from the right sinus of the aorta - a small protrusion of the arterial wall located directly under the aortic valve. It comes downwards to the right along the groove between the right atrium and the right ventricle, passing further along the lower surface of the heart. Here it ends, branching out and forming anastomoses - a network of small vessels connecting it with the branches of the left coronary artery. Several branches originates from the right coronary artery.

The left coronary artery originates from the coronary sinus located above the aortic valve and descends towards the apex of the heart. Not far from its opening, it separates into two branches.

In most people, the right and left coronary arteries provide blood supply to the heart equally. At the same time, the nature of their branching can vary significantly.

Branching options:

Normal anatomy of the coronary arteries. In most people, both coronary arteries provide blood supply to the heart equally.

Absence of one coronary artery. In rare cases, there may be only one coronary artery nourishing both parts of the heart.

Dominance of the left coronary artery. In this variant of branching, the posterior interventricular artery originates not from the right coronary artery, but from the left one.

Additional coronary artery. It is seen in a very small part of people.

Approximately in 15% of cases, most of the blood supply to the heart is provided by the left coronary artery, where from the wide posterior interventricular artery (usually a branch of the right coronary artery) originates. In rare cases, a person may have only one coronary artery, and sometimes an additional vessel. Many other branching options are also possible.

VITAMINS AND THEIR FEATURES

Shusharin N. - the 2nd year student
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There are many vitamins in nature, but vitamins A, C, D, and E are thought to be the most important vitamins for the human body.

Vitamin A is essential for the functioning of the human immune system, as well as for vision (prevents the development of night blindness), bones, skin and hair growth. It plays an important role in metabolism participating in redox reactions and regulation of protein synthesis. It slows down the aging process being a powerful antioxidant. Vitamin A also promotes the function of cell and subcellular membranes and plays an important role in body fat and the bone tissue formation. It is necessary for tissue regeneration, plays an important role in the prevention and treatment of cancer, including preventing the reappearance of tumors after surgery. It increases the content of "good" cholesterol in the blood, normalizes the activity of the sexual glands being necessary for the activity of the ovum and the sperm formation. Vitamin A enhances the antioxidant effect of vitamin E. With a lack of vitamin A, avitaminosis occurs. Xeroderma, xerasia, fatigue, weight loss and insomnia are also possible.

Vitamin C has numerous functions that make its use very important for maintaining and improving health. The value of ascorbic acid is as follows: it is an antioxidant - this means that the substance resists the destructive process of lipid peroxidation in tissues, protects the body from diseases and aging; strengthens the immune system, increases its "alertness" against harmful microorganisms, especially viruses; promotes the full formation of connective tissue, strengthens bones, joints; Vitamin C "helps" folic acid, vitamins A and E, and iron to be absorbed and reveal their effect; improves skin condition; due to its independent anti-inflammatory effect, it reduces the severity of inflammation in acne; reduces bleeding, strengthens blood vessels; prevents the rapid development of atherosclerosis, inhibits the growth of cholesterol plaques in the vessels; reduces the toxicity of alcohol, improves detoxification, neutralization of many toxic and harmful substances such as components of tobacco smoke, substances that pollute water and air, drug metabolites, etc .; reduces the negative impact of stress on health; accelerates the recovery of various tissues in case of damage. Vitamin C also has a lightening effect on the skin. With its lack in a human body the increased fragility of small blood vessels and scurvy disease (in which gums bleed and immunity weakens) develop.

The most important function of vitamin D is that it is responsible for bone mineral metabolism. With its help, the body assimilates phosphorus and calcium, important elements for building bones. With a normal intake of vitamin D high bone strength is ensured. Also, calciferol takes part in the production of sex hormones as its presence is necessary for the synthesis of estrogen and testosterone. It participates in regulation of the menstrual cycle, ensuring the ability to reproduction. While potentiating the effects of calcium, vitamin D improves blood clotting, helps to improve metabolism in general, participates in the work of the immune system, helps to improve the condition of the skin, may be used in the fight against skin diseases; plays an important role in the formation of the musculoskeletal and nervous systems, in the implementation of the growth and development processes in young children. With a lack of vitamin D, the work of enzymes promoting the absorption

of calcium is disrupted, therefore rickets develops. This disease manifests itself in the softening of bone tissue, and then in brain damage.

Vitamin E actively binds to free radicals and deactivates them, preventing cell damage, slows down started oxidation of lipids and DNA of cells under the influence of free radicals. It inhibits the formation of new free radicals and improves the absorption of vitamin A. Vitamin E provides the prevention of skin hyperpigmentation with an age, prevents the appearance of cancer cells reducing the risk of developing malignant tumors, slows down the aging process by protecting cells from damage by free radicals, timulates the production of collagen and elastin needed to maintain the quality of connective tissue, relieves the symptoms of diabetes and Alzheimer's disease. Lack of vitamin E can cause reproductive problems and muscular weakness. The muscle degeneration (especially of the diaphragm) and a decrease in the life cycle of blood cells may develop.

NOSOCOMIAL INFECTIONS

Olkhovskaya E. – the 3rd year student
Supervisors: Doc.Med.Sc. N.V. Korshunova, O.I. Katina

Nosocomial infections, according to the WHO definition, are any clinically pronounced diseases of microbial origin affecting a patient during his hospitalization or visiting a medical institution for treatment, or after the discharge from the hospital (for example, wound infection), as well as hospital staff due to their activities, regardless of whether the symptoms of this disease appear or do not during the stay of these persons in the hospital.

An infection is considered to be nosocomial if it first manifests itself in 48 hours or more after being in the hospital, in case of absence of any clinical manifestations of these infections at the time of admission and the exception of an incubation period probability.

Examples of such diseases are: tuberculosis, urinary tract infections, hospital pneumonia, gastroenteritis, Staphylococcus aureus.

The sources in most cases are: medical staff, carriers of latent forms of infection, patients with acute, erased or chronic forms of infectious diseases including wound infection. Hospital visitors are sources of nosocomial infectionsvery rarely.

The transmission factors are most often dust, water, food, equipment, medical instruments and other fomites. Mechanisms of transmission of infection: aerosol, fecal-oral, contact, hemocontact.

For the treatment of such diseases, the concept of de-escalation therapy has been developed. Its essence lies in the fact that as a starting empirical therapy, being started immediately after diagnosis, a combination of antimicrobial agents acting on all possible pathogens of infection is used.

IMMUNOBLOTTING. MECHANISM AND APPLICATION.

Olkhovskaya E. – the 3rd year student
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Blotting is a technique for detecting proteins that are provided by applying separated molecules (for example, antigens) to any carrier.

One of the options is Western blotting (protein immunoblot). This method is used to determine certain antibodies for the diagnosis of infectious diseases. It is more sensitive and specific than screening methods for detecting IgG and IgM antibodies.

The essence of the method is as follows: various antigens associated with an infectious agent are applied to the strip. Next, the tested biological material (serum) is applied. If there are antibodies to these antigens in the serum, they bind to them. After that, the washing of unbound antibodies is carried out.

After that, the strips are washed and secondary antibodies (antibodies to antibodies) are applied to them. If antibodies remain at the first stage after washing, they bind to secondary antibodies. After that, ablution is carried out again. Unbounded secondary antibodies are washed away.

Secondary antibodies have a special mark by which we can determine whether they have bound to antibodies or not.

Advantages of this method:

- evaluation of such a strip is carried out comprehensively;
- the sensitivity of this method is 97%, and the specificity is 99 %;
- high resolution between negative and positive results;
- more accurate identification of the period of infection.

It is used to confirm the results of screening studies, such as ELISA or immunofluorescence analysis (IFA).

Currently, the following infections are widely diagnosed by the immunoblot method: IgG and IgM class antibodies to rubella by the immunoblot method; IgG and IgM class antibodies to CMV by the immunoblot method; IgG and IgM class antibodies to toxoplasmas by the immunoblot method. In addition immunoblotting helps to check the results of screening tests and clarify which type of virus a person is infected with: HIV-1, HIV-2 or both.

TREATMENT OF DIABETIC FOOT SYNDROME

Olkhovskaya E. – the 3rd year student
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Diabetic foot syndrome is a complex of anatomical and functional changes developing against the background of diabetic neuropathy, micro- and macroangiopathy, and osteoarthropathy, that contribute to increased traumatization and infection of the soft tissues of the foot, the development of purulent necrotic process and in advanced cases leading to amputation.

In the treatment of this syndrome, a patient is obligatory administered with: vascular therapy as the main goal is to restore blood flow (the use of anticoagulants and antiplatelet agents); vitamin therapy; antispasmodics; specific drugs aimed at maintaining normal blood glucose levels.

In mild and uncomplicated infections of moderate severity, oral administration of antibiotics active against aerobic gram-positive cocci and characterized by high oral bioavailability (cephalexin, clindamycin, lincomycin, cotrimoxazole) is recommended. For the treatment of severe infections, as well as common, chronic infections of moderate severity, antibiotics with a wide spectrum of action are used for empirical therapy.

Surgical intervention includes: opening of abscesses, phlegmon, necrectomy; surgical interventions to restore arterial blood supply to the foot - angioplasty and stenting of the arteries of the lower extremities, autovenous bypass surgery, endarterectomy; amputations and economical resections. In addition, revascularizing osteotrepanation and sympathectomy (surgical interventions aimed at preserving the limb) are performed.

New methods of diabetic foot syndrome therapy are constantly being examined in the world, including: extracorporeal shock wave therapy, growth factor therapy, treatment using stem cells, plasma jet therapy, bio-mechanical method, plasma therapy (to improve the rheological properties of blood). Improving the treatment of diabetic foot increases the probability of limb preservation and restoration of its function.

PULMONARY EMBOLISM: CAUSES, MORPHOLOGY, OUTCOMES

Olkhovskaya E. – the 3rd year student
Supervisors: Can.Med.Sc., assoc. prof. N.V. Menshikova, O.I. Katina

Thromboembolism of pulmonary artery is an occlusion of the pulmonary artery or its branches by blood clots that are formed mostly in the large veins of the lower extremities or pelvis (embolism).

The most common causes of the development are:

- deep vein thrombosis (DVT) of the lower leg (in 70-90% of cases), often accompanied by thrombophlebitis;
- thrombosis of the inferior vena cava and its tributaries;
- cardiovascular diseases predisposing to the appearance of blood clots and embolisms in the pulmonary artery (hypertension, infectious endocarditis);
- septic generalized process;
- oncological diseases (more often pancreatic, stomach, lung cancer);
- thrombophilia;
- antiphospholipid syndrome — the formation of antibodies to phospholipids of platelets, endothelial cells and nervous tissue (autoimmune reactions).

Morphology: Lungs with embolism of the main trunk of the pulmonary artery are macroscopically little changed. Microscopically, a significant decrease in the tracery of the pulmonary parenchyma is noted. The rounded outlines of the alveoli are lost, the interalveolar septa become convoluted, and the cavities are irregularly elongated and even slit-shaped. Along with this, there are areas where the lung tissue has retained its inherent lightness. In each field of view of the small magnification of the microscope, spasmodically contracted and altered vessels of the type of dystonia are visible in the intra-lobular and inter-lobular connective tissue. Accordingly, they have sinuous outlines and a narrow lumen or tortuosity alternates with paretic expansion. There are few red blood cells in such vessels or their lumens are empty. The capillary network of the pulmonary parenchyma is filled with blood unevenly: areas of anemia alternate with areas where the capillaries appear as if injected with blood. With embolism of the peripheral vessels of the lungs, their volume is increased. Multiple emboli are found on the incisions in the lumen of medium and small arteries. Microscopically, the lung pattern differs by polymorphism. The tissue is edematous, full-blooded, there are foci of pneumonia of various ages, focal hemorrhages and hemorrhagic infarcts with blurred borders. At the same time, local thrombosis is noted as a manifestation of a deep circulatory disorder in the lungs.

Outcome: In many cases, it ends in a fatal outcome. If the embolus is small, it can obstruct the small arterial branch and cause hemorrhagic lung infarction. With a mass embolism, there is an acute decrease in blood pressure (collapse).

VARIANTS OF THE HEART STRUCTURE AND THEIR SIGNIFICANCE IN SURGERY

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The heart is a hollow fibromuscular organ that provides blood flow through blood vessels by repeated rhythmic contractions.

The function of the heart is to pump blood through the blood vessels.

The heart develops from two symmetrical rudiments that combine into one tube located in the neck area.

The heart consists of 4 chambers: two atria and two ventricles — right and left.

For the formation of all body systems, the fetus needs its own blood circulation. Therefore, the heart is the first functional organ that develops in the body of a human embryo. It happens approximately at the third week of fetal development.

The heart is a complex organ that actually rests only in the intervals between heart contractions. A healthy heart contracts and dilates rhythmically and without interruptions.

Cardiac surgery - sometimes called cardiovascular surgery or cardiothoracic surgery is a field of surgery and cardiology that eliminates pathologies of the cardiovascular system.

Surgical interventions are required in cases of diseases of the cardiovascular system quite often. In particular, cardiac surgery is the most effective way of coronary heart disease treatment that allows preventing the development of myocardial infarction. The most invaluable role is played by cardiovascular surgery in the elimination of congenital pathologies of the heart and blood vessels.

CLIMATE AND HEALTH

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Climate is a combination of meteorological factors, solar and terrestrial radiation, magnetic fields, terrain, atmospheric electricity. Climatic properties – are air temperature and humidity, atmospheric pressure, precipitation - all this affects a person's well-being. B.P. Alisov established that there are 4 main climatic zones on Earth – these are equatorial, tropical, temperate and polar And there are three transitional ones — subequatorial, subtropical and subpolar.

The most pronounced and active influence is exerted by atmospheric temperature, pressure, solar radiation and humidity. With an increase in the temperature regime, a person responds to it with a decline in the excitability of the nervous system, vasodilation, low pressure, and the metabolic process decreases. The onset of a cold temperature regime is reflected in the reverse reactions. Low humidity is much better tolerated by the human body than the high one or dryness. With excessive dryness, health deteriorates - the skin and lips become chapped, nasal irritation, tonsillitis or quinsy appears. And with excessive humidity, health can deteriorate - the appearance of allergic reactions, asthma problems, and rhinitis. An important role is played by the adaptability of people to a certain climate, acclimatization of the body, its ability to develop thermoregulation reflexes. The climate can affect the course of the disease: aggravate it or contribute to the cure.

The influence of the marine climate on human health.

Such conditions suggest fresh, saturated sea salt air. The picturesque coast, especially the southern one, reflected solar radiation, the absence of sudden temperature changes - these factors normalize all body functions during the pathological process. A vivid example is the climate of Crimea. Against the background of such conditions, various types of therapy have a deeper effect on the course of metabolic and trophic processes and balance the processes of inhibition and excitability in the central nervous system.

The influence of the mountain climate on human health.

The stimulating effect occurs when staying in a high-altitude area. This is facilitated by low barometric pressure at high altitude, sudden changes in daytime and nighttime temperatures, fresh air, as well as the landscape. Increased excitability of the nervous system stimulates metabolic processes.

Low blood pressure enhances the hematopoietic functions of the bone marrow. These phenomena can be attributed to favorable stimuli. In the conditions of the highlands, it is recommended to stay for those who need to stimulate sluggish pathological processes. At the same time, an increase in the metabolic rate balances the nervous processes, which stimulates the immune system.

The influence of a temperate climate on human health.

The conditions of the steppes and forests are characterized by slight temperature fluctuations, moderate and stable humidity. These factors are a good workout for the body of healthy people. Everyone is recommended to visit such an area, since the local regime will not cause harm. The middle band has a clear change of seasons - winter, spring, summer and autumn. A change in weather conditions is necessarily accompanied by a change in physiological reactions. The ultraviolet radiation here is sufficient, the weather conditions are stable. This makes it possible to use the climate for people with quite different pathologies. It will have a particularly good effect on those who suffer from cardiovascular diseases.

Thus, the climate has a direct and indirect impact on humans. The direct influence is very diverse and is due to the direct effect of climatic factors on the human body. As a rule, it is influenced not by one isolated factor, but by their totality, and the main effect is not the usual fluctuations in climatic conditions, but mainly their sudden changes.

THE VARIANT ANATOMY OF PARANASAL SINUSES

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The sinuses, being located in the skull bones, contribute to weight reduction of the bones, increase their strength, serve as resonators of the voice formation, and take part in warming the inhaled air.

Knowledge of the presence of extreme variants of the anatomical structure of the nasal cavity and paranasal sinuses is often crucial in stating the diagnosis and determining further tactics of patient observation.

The maxillary sinus (sinus maxillaris)

Developing and increasing in volume, it may have such anatomical features that may deviate from the classical canons. The shape and the degree of maxillary sinuses pneumatization depend on the sex of the individual, and also they vary depending on the type of facial skeleton and the preservation of teeth.

1) Triangular 60.1%
2) Tetrahedral 27.7% (there are cases of missing several teeth)
3) Slit-shaped 4.5 %
4) Indefinite 7.7% (in 50% of cases it occurs with complete absence of teeth)

Frontal sinus (sinus frontalis)

1) Agenesis of the frontal sinus – the absence of a frontal sinus. In 12-25% of cases it occurs more often on one side.
2) Hypogenesis of the frontal sinus - the sinus is defined as a rudiment.
3) Frontal sinuses extending into the frontal scales above the nasal bridge, but not extending beyond the boundaries of the frontal bone.
4) Hypergenesis ofthe frontal sinus – the frontal sinus extends beyond the normal boundaries of the frontal bone, spreading into neighboring bones or causing its deformation.
5) Frontal sinus with depressions or sacs extending into bone processes and adjacent bones.
6) Multichambered frontal sinus – frontal sinus with full or incomplete septa.

Sphenoid sinus (sinus sphenoidalis)

Sphenoid sinuses can extend in the form of protrusions into the processes and other bones, therefore, sacs are classified according to their anatomical localization (ethmoidal, maxillary, supraorbital, rostral, occipital, upper-lateral, lower-lateral, back of the Turkish saddle, wing-shaped).

1) Presellar form (the sinus does not go beyond the saddle tubercle)

2) Sellar shape (the sinus reaches the back of the saddle)

3) Postsellar form (sinus reaches the border with the occipital bone or extends to its basal part).

Ethmoid sinus (sinus ethmoidalis)

The cells are rounded and oval, less often irregular or polygonal, and their shape and number may vary in different sections (anterior, middle, posterior). There are 3 groups of cells according to their volume: small (2-5 sq. mm), medium (5-10 sq. mm), large (10-15 sq. mm). They are more often located in the posterior parts of the ethmoidal bone. They are often represented by one large cell, the large ethmoidal vesicle, bulla ethmoidalis. Small cells are typical for the middle section of the labyrinth, and medium ones - for the anterior section.

THE PINEAL GLAND

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The pineal gland (epiphysis) is an outgrowth of the roof of the third ventricle of the brain. It is covered with a connective tissue capsule, from which cords extend inward, dividing the organ into lobes. Parenchyma lobules contain pinealocytes and glial cells.

No sex differences in the size of the pineal gland have been found to date.

The epiphysis is especially noticeable at a young age. The size of the gland increases up to 2 years and remains more or less constant until 18-20 years. Later calcium and magnesium salts are deposited in it.

The activity of the pineal gland depends on the frequency of illumination (light is the main regulatory factor in the activity of the pineal gland).

The first step in melatonin biosynthesis is the conversion of the amino acid tryptophan under the influence of tryptophan hydroxylase into 5-hydroxytryptophan.

Non-acetylated serotonin is deaminated by pineal gland monoamine oxidase, is converted to 5-hydroxyindoleacetic acid and 5-hydroxytryptophol.

The pineal gland is a small, pea-sized area in the human brain.

Norbekov claims that he studied 2500 people and came to the conclusion: the data of the pineal gland activity directly affects the success of a person in life and even his intuition.

The pineal gland is the ultimate (or perfect) form of the development of a living process, the final phase of which is the phase of formation of a crystal of the structure of memory in the general phase transformation sequences: Fire (electromagnetic radiation plasma - light) - Air (gaseous state) - Water (liquid state) - Earth (solid or crystalline state).

The pineal gland is directly connected with the system of perception and transformation of the Light of the Sun, being a regulator of the physiology of the body (it produces hormonal molecules) throughout life and reading the spectrum of the Sun at the same time.

The properties of pineal cells (pinealocytes), due to their ability to form an inorganic component of brain sand in the form of deposits of crystals of hydroxyapatites and calcium hydrogen phosphate, is not something special in the human body.

THE CONSEQUENCES OF THE VOLCANO ACTION IN THE SAKHALIN REGION

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There are a great number of active volcanoes in the Sakhalin Region. About 37 of them are in the Kuril Islands. The names of famous volcanoes and the consequences of their eruptions are described below:

1. Ebeko Volcano (2020) - The Ebeko volcano threw out with a roar a column of ash to a height of 3.7 km on the morning of August 25. That negatively affected marine life. But no one was injured during this eruption.
2. Syrecheva (2009) - the eruption of this volcano caused intense melting of snow and, as a result, the descent of lahars. Two lava flows were isolated, each over 2 km long and over 100 m wide. And as a result of this eruption, the area of the island increased by 1.5 km2, and the surface of the volcano dropped by 40 mm and shifted north by about 30 mm.
3. Berga (2005) - after the eruption of the volcano, the release of volcanic ash followed respectively. No victims were found, but the flora and fauna in the area of this volcano is quite damaged.
4. Chikurachki (2002) - in 2002, the military settlement of Podgorny, located closest to the cherry-red cone of Chikurachki, was covered with a two-centimeter layer of ash.
5. Chirinkotan (2004) - an ash column was seen on the Kuril volcano Chirinkotan on Tuesday, November 29. An ash column was found on satellite images of the Tokyo VAAC agency. Its height was 8.8 km. Subsequently this led to hard air pollution.

PROFESSOR-ANATOMIST, THE HERO OF THE SOVIET UNION DYSKIN EFIM ANATOLYEVICH (1923–2012).

Shushakova V., Tishchenko G. – the 2nd year students
Supervisors: N.P. Ambrosieva, O.I. Katina

Hero of the Soviet Union Efim Anatolyevich Dyskin – is a prominent Russian scientist and teacher of higher education, the head of the Department of Normal Anatomy (1968-1988), Honorary Doctor of the Military Medical Academy named after S.M. Kirov, Major General of the Medical Service. Professor E.A. Dyskin is the founder of a new scientific direction "Anatomy and Military Medicine".

He was born in a family of a civil servant. After finishing a secondary school number 3 in Bryansk, he entered the Moscow Institute of Philosophy, Literature and History. When the war began he finished only a first course.

In August 1941, the Sokolniki district military registration and enlistment office of the city of Moscow was drafted him into the ranks of the Red Army. And from the fall of 1941 he took part in the battles of the Great Patriotic War.

Until the beginning of November, Dyskin and his colleagues repelled German air raids on Moscow, but later it was tank attacks that began to pose the greatest danger. Anti-aircraft guns were urgently transferred to anti-tank ones, and in mid-November E.Dyskin's regiment was redeployed to the Volokolamsk direction.

On November 17, heavy fire rained down on a battery of four guns, one of which the young artilleryman Dyskin was a gunner, and then a tank attack began. After a while, three cannons were out of order. The last remaining gun continued the battle. The commander, the left guide and the carrier of the shells were killed. The regiment commissar who arrived in time took over the function of the carrier of shells and the four-wounded, bleeding gunner Dyskin continued firing. After the

seventh tank knocked out by him, the attack of the fascists drowned out, and there was silence. Yefim lost consciousness.

The medical instructors who arrived in time carried him out of the battlefield and took him to the Istra Medical Battalion without much hope of recovery. But a miracle happened - a young strong youth survived. The still very weak Dyskin was transferred to Vladimir, and from there he was sent for further treatment to Sverdlovsk. In April 1942, a retinue headed by a general came to the ward to the lying Yefim: the head of the hospital, doctors, a representative of the military enlistment office with the newspaper Pravda in his hands. Nobody could understand what had happened. Finally, a nurse ran up to him with the words: "Fima, you are quietly lying here alive, and there you were awarded the title of Hero ... posthumously ...". Considered dead, the title of Hero of the Soviet Union was awarded posthumously. The same Decree of the Presidium of the Supreme Soviet of the USSR of April 12, 1942 and also posthumously the highest sign of military valor was awarded to the legendary commander of the 316th rifle division, Major General I.V. Panfilov, whose fighters had performed their feat the day before, on November 16.

When it turned out that the hero-artilleryman was alive and was in the hospital, a government telegram came, signed by M.I. Kalinin with congratulations and confirmation of the award.

In June 1942 at the Sverdlovsk Opera and Ballet Theater in a solemn atmosphere 19-year-old Efim Dyskin was awarded a diploma of the Hero of the Soviet Union, the Order of Lenin and the Gold Star medal.

Efim Anatolyevich recalled: “... I recovered slowly, with difficulty, but the selfless work of the hospital's medical staff, raising the practically hopeless to their feet, worked wonders. I wanted to join them, besides, I understood that after such severe wounds, the way back to the artillery was closed to me ...”.

An important role in the further fate of the wounded artilleryman was played by the fact that on the basis of the Sverdlovsk hospital, where he received treatment, a military medical secondary school evacuated from Kiev was housed. So, being in a hospital bed, as they say - in a hospital gown, Efim began to attend classes with the students of the school, gradually becoming more and more involved in studies. Having successfully passed the exams for a three-year course in medical secondary school, E.Dyskin went to Samarkand, where the Military Medical Academy was evacuated from Leningrad in November 1941. Being a cadet, together with the Academy that returned from evacuation in 1944, Efim went to Leningrad. He graduates in 1947 and forever connects his fate with this oldest, glorious Russian educational institution.

In 1951, Dyskin defended his thesis, and in 1961 - his doctoral thesis on intestinal anatomy. The object of study of a medical scientist is theoretical and applied issues of military medicine: the morphology of a gunshot wound, the impact of high-power blast waves on the body, gravitational overloads and other extreme factors. In 1966, Dyskin became a professor. And two years later, for the next twenty years, headed the Department of Normal Anatomy.

In 1989, Efim Anatolyevich, as a professor-consultant, moved to the Department of Forensic Medicine of the Military Medical Academy. His students adored him, and even the most notorious truants did not miss lectures on neuroanatomy. According to his son's recollections, Dyskin knew his lectures by heart, but at the same time he prepared for each of them in the most serious way. They were constantly corrected, edited, updated. He delivered lectures in a chant, often used aphorisms, Latin expressions, poetry. His friend, corresponding member of the Academy of Medical Sciences, a well-known physiologist called Efim Anatolyevich's lectures "theatrical performance." It is no coincidence that Dyskin's lectures are often recalled by many graduates of the Military Medical

Academy. Over the years, the professor has written more than 100 scientific papers. Twice he became a laureate of the USSR Academy of Medical Sciences Prize.

In 1981, Yefim Dyskin was awarded the rank of Major General of the Medical Service.

Efim Anatolyevich Dyskin did not live only a few months before his 90th birthday.

PATHOMORPHOLOGICAL FEATURES OF SARCOIDOSIS

Borisov F., Khabarova V. – the 3rd year students
Supervisors: Cand. Med. Sc., assoc. prof. N.V. Menschikova, O.I. Katina

Sarcoidosis is a disease characterized by the growth of tiny collections of inflammatory cells (granulomas) in any part of your body. Most commonly they are in the lungs and lymphnodes.

Pathological anatomy of sarcoidosis has various manifestations depending on the localization of the process, its course and duration. Morphologists distinguish 3 stages of its development: 1 - alveolith; 2 - granulomas; 3 - fibrosis.

Bronchocentric alveolite is manifested by a pronounced reaction of the vessels of the microcirculatory bed of alveoli with impaired permeability of their walls, edema of interstitial tissue, abundant infiltration by lymphocytes, and proliferation of macrophages.

A small amount of exudates with lymphoid and macrophage cells appear in the alveoli lumen. Sarcoidosis is usually determined at the granulomatosis stage when granulomas are detected. Their formation begins with a hyperplastic reaction, when single clusters of loosely located monocytes, macrophages, giant multinuclear cells among numerous lymphocytes are found on the walls of microvessels (arteriole, venulas, capillaries).

Subsequent development is characterized by the formation of epithelioid cells. The maturation of granules is characterized by the formation of large epithelioid cells, the appearance of numerous multinuclear cells such as foreign bodies with various inclusions in the cytoplasm in the form of Schauman bodies and less often asteroid bodies.

Sarcoidosis is characterized by early development of fibrosis, focal – in the granule zone and diffuse – in interstition. Particle fibrosia begins with the periphery, although the central zone is also fibrosed later, fragmented into separate cell areas. Hyaline masses are deposited in it.

Subsequently, rounded dense scars are formed on the spot of the granule. Irreversible fibrosis, as the final stage of sarcoidosis, occurs in 5-52%.

In accordance with the International Agreement on Sarcoidosis, its morphological diagnosis is based on three main criteria: 1) the presence of a well-formed non-caseous granuloma with a whisk of lymphocytes and fibroblasts along its outer edge; 2) perilimphatic interstitial arrangement of granules and 3) exclusion of other causes of granule formation.

INFANTILE CEREBRAL PARALYSIS

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Infantile cerebral paralysis is a severe brain disease manifested in various psychomotor disorders with a leading motor defect. The reasons for these disorders can be different: various chronic diseases of the expectant mother, infectious diseases suffered by the mother, especially viral diseases, incompatibility of the mother and the fetus by the Rh factor or group affiliation, and much more.

Predisposing factors can be - fetus prematurity. In some cases, the cause of ICP can be: obstetric traumatism and protracted childbirth with an entanglement of the umbilical cord around the fetal neck that leads to damage of the child's brain nerve cells due to lack of oxygen. And sometimes

ICP occurs as a result of infectious diseases complicated by encephalitis (inflammation of the brain substance), and after hard head bruises.

Cerebral palsy is usually not a hereditary disease. There are four main forms of ICP, depending on muscle tone disorders:

The first form is the spastic form - muscles tense. Spastic cerebral palsy is the most common, accounting for 80% of all cases. The muscle tone is increased. They are constantly in a state of contraction making it difficult to work.

The next form is the atactic form - a violation of balance and coordination. Children with atactic cerebral palsy have difficulties with balance and coordination. This is manifested by problems with walking, as well as with fast movement or action. That requires concentration and control.

The third form is dyskinetic one - uncontrolled motor activity. With dyskinetic cerebral palsy, uncontrolled movements of the arms or legs are observed. They may be as slow and flexible so as fast and choppy.

And the last form is a mixed form - it is impossible to distinguish the signs of only one form of cerebral palsy, which is more prevalent. But symptoms of different types appear simultaneously.

Sometimes the symptoms of cerebral palsy can be detected immediately at birth, namely during the time when the doctor examines the child and assesses her condition. But most often the diagnosis is made only at the age of one to two years. Cerebral palsy may be accompanied by the following symptoms: changes in muscle tone from complete relaxation to severe tension, severe muscle tension, impaired coordination of movements (ataxia), slow, flexible movements (athetosis), tremors or uncontrolled erratic movements, seizures (epilepsy), visual impairment, hearing, mental retardation, and children express unreasonable anxiety or lethargy.

How is cerebral palsy treated? There are many methods of conservative and alternative medicine used to treat patients with cerebral palsy. These are: Professor Kozyavkin's method (Intensive Neurophysiological Rehabilitation System), drug treatment (botulinum toxin A preparations, central muscle relaxants), means of orthopedic correction, stage plastering, orthopedic shoes, splints indications, surgical treatment (lengthening of the tendons, reducing the tone of the affected muscles)

Young children have a high potential for brain regeneration, and therefore treatment of cerebral palsy should be started as early as possible. Only the synergy of the efforts of a multidisciplinary team of specialists in various fields of medicine, rehabilitation and psychology can maximize the effect of treatment and help to achieve its maximum results.

MORPHOLOGICAL FORMS OF SEPSIS

Ionova I., Aloyan A.- the 3rd year students
Supervisors: Cand.med.Sc., assoc.prof. N.V. Menshchikova, O.I. Katina

Sepsis is a serious pathological condition developing against the background of immune deficiency. It is accompanied by the penetration of the pathogen into the blood and its circulation and is characterized by pronounced infectious and inflammatory endotoxicosis.

There are 3 clinical and morphological forms of sepsis: Septicopyemia – is a sepsis with metastatic abscesses in the tissues; septic endocarditis – is a purulent fusion of the aortic valves, less often of the mitral valves.

The prerequisites for the development of sepsis in the body are the presence of a focus of purulent infection and a background immunodeficiency state. Macroscopic picture: with septicemia, there is only some edema and dystrophic changes in the organs, as well as with some gram-positive pathogens – hemorrhagic syndrome and hemolytic jaundice caused by the circulation of bacterial

exotoxins in the blood. Septicopyemia is characterized by the presence of lung abscesses, located mainly subpleurally, and microabscesses under the capsule and in the parenchyma of the kidneys, liver, myocardium.

In case of septic endocarditis, damage to the aortic valves or mitral valves manifests itself as ulceration with the imposition of warty thrombotic masses, sometimes perforation or subtotal destruction of the valve. Microscopic picture: in the lymphoid organs histological changes characteristic of immune deficiency are noted.

All forms of sepsis are manifested by severe infectious and inflammatory endotoxicosis with dystrophic and necrobiotic changes underlying organ failure, the leading of which are acute heart failure and acute pulmonary failure.

CLINIC OF ARTERIOVENOUS MALFORMATIONS OF THE BRAIN

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Supervisors: Cand.Med. Sc. D.Y. Konkova, O.I. Katina

Arteriovenous malformation (AVM) is a congenital or hereditary pathological connection between veins and arteries. The anomaly is caused by a mutation of the RASA1 gene (inherited in an autosomal dominant manner) or as a result of intrauterine local disorders in the formation of the cerebral vascular network, developing with an increased radioactive background, the presence of intrauterine infections, diseases of a pregnant woman (diabetes mellitus, chronic glomerulonephritis, bronchial asthma), intoxication, bad habits of a pregnant woman (drug addiction, smoking, alcoholism), when taking pharmacological drugs during pregnancy that have a teratogenic effect.

Pathological influence of AVM on the brain: rupture of pathologically altered vessels that form the AVM, or aneurysm of the artery nourishing the AVM; chronic circulatory failure caused by the discharge of blood from an artery into a vein; breakthrough syndrome of normal perfusion pressure.

There are two types of clinical manifestations of cerebral AVM: hemorrhagic and torpid.

Hemorrhagic type (50 - 70% of all cases) – is characterized by a small size of the malformation node and drainage into the deep veins of the brain, localization in the posterior cranial fossa. Clinically is manifested by arterial hypertension, later hemorrhage may develop (most often - subarachnoid).

Torpid type – is characterized by a large size of the malformation node, localization in the cerebral cortex. Clinically manifests itself as seizures, cluster headaches, and neurological deficiency. Depending on the location, the patient may develop muscle weakness, impaired coordination, dizziness, visual impairment.

DIAGNOSIS OF AUTISTIC SPECTRUM DISORDERS

Buinova Y., Likhno E. – the 4th year students
Supervisors: M.I. Arkhipova, O.I. Katina

Autism Spectrum Disorder (ASD) is a spectrum of psychological characteristics describing a wide range of abnormal behavior and difficulties in social interaction and communication, as well as strictly limited interests and frequently repeated behavioral acts.

The terms "ASD" and "autism" in the general sense discussed above are synonymous.

Autism spectrum disorder is diagnosed by identifying symptoms of autism in a child's behavior and development.

The diagnostician observing a child may play or talk with him. He also asks those close to the child about how the child behaves at home and about the developmental characteristics of this child from birth. Occasionally, professionals may ask parents to fill out questionnaires, as well as conduct

special diagnostic interviews with parents. All of this helps in identifying and clarifying the symptoms of autism.

But so far there are no instrumental methods or analyzes that make it possible to establish or refute the diagnosis of autism with a 100% probability.

Symptoms of autism become apparent up to two or three years of age. At this age, as a rule, it is possible to diagnose autism quite confidently. With a child's growth, the severity of autism symptoms becomes less pronounced, but in most cases they remain more or less noticeable.

The main WHO criteria for the diagnosis of ASD:

1. Qualitative violations in the field of social interaction.
2. Deficit of the need for communication, depending on the degree of violations.
3. Expressed behavioral disorders, manifested in limited and stereotyped models of various types of activity.
4. Specificity and variability of intellectual and speech development.
5. Motility disorders.
6. Heightened sensitivity.
7. Self-harm.
8. Violation of the sense of danger.

BAIKAL: PROBLEMS OF THE WORLD TREASURE – INFORMATION OF THE XXI CENTURY

Budaeva D., Sambueva A. – the 2nd year students
Supervisors: Cand.Biol.Sc., assoc.prof. V.V. Zaritskaya, O.I. Katina

For the authors of research, Baikal is not only a world treasure, but also our Homeland. It is our affection and pride. For everyone who knows about Lake Baikal, or has been on its shores - it is a fascinating lake with its pristine nature and mystery. This is a unique ecosystem - the pearl of Russian nature. And it can rightfully be called a national and world wealth. Baikal is famous all over the world not only for its stunning landscapes, but also for its inhabitants. The giant space of water is a home to a large number of fish, mammals and other representatives of the Biota that cannot be found in any other corner of the world. A unique flora and fauna of its kind has been preserved on the coastal territory. Baikal is included in the list of UNESCO World Heritage Sites, which once again proves the indisputable fact of the importance of preserving and caring for the nature of Lake Baikal. But, unfortunately, humanity is not able to preserve this unique beauty and primevalness. Therefore, for us, residents of Transbaikalia, it is extremely important that the lake is always completely safe, while we are talking about his Illness!

The purpose of the research was: to establish the ecological problems of the lake; to detect tasks to prevent pollution of Lake Baikal.

Forests are the most important component of any ecological niche in Russia. It is they who, putting their roots deep into the soil, prevent shallowing of water. Forests form a unique climate in its kind, preserving favorable conditions for the existence of living organisms unique to Baikal, the integrity of unique biogeocenoses. More than 80% of all environmental crimes near Lake Baikal account for illegal felling of trees and shrubs, as well as destruction and damage to forests.

The extinction of the unique flora and fauna of Lake Baikal is the most important problem. It is surprising that the lake, after many millennia, is still able to mostly preserve its environment and endemics. The flora and fauna of Lake Baikal is rich, and at the same time very fragile. Many living creatures living in the lake and in the surrounding areas are threatened with extinction. This is due both to the limited range of some species and to various human activities, in particular poaching.

According to scientific data, out of 1200 inhabitants of the lake, about 800 are endemic (!). An example is the extermination of the great cormorant back in Soviet times.

Mass tourism. Baikal is one of the most famous and visited natural attractions in Russia. For example, in 2019, the region attracted more than 1.6 million tourists. However, this figure also has a negative outcome in terms of the ecology of Lake Baikal. The fragile soil in this area cannot withstand such large crowds of people who trample down plots of land in the most picturesque places of the island and on the way to them. Also after an unforgettable vacation, most tourists do not care about the disposal of their waste, which later turn into huge mountains of garbage.

Pollution of the water basin - in terms of water volume, Baikal is in first place among the freshwater lakes of the world and contains 20% of the reserves of all fresh water on the globe. This is what they use, building huge factories on the coastal zone. These are, as a rule, household and oil-containing waters formed as a result of the mechanisms operation. Every year at least 160 tons of oil products enter Baikal from ships.

Spirogyra algae - as a criterion for the violation of the biosystem. Not so long ago, scientists have established the fact of active reproduction and spread of spirogyra algae (due to the oversaturation of water with phosphates). Spirogyra algae, multiplying, cover the entire surface of the lake, turning the crystal-clear surface of the lake into a black thicket, from which there is a terrible fetid smell of rot. There is no need to talk about the extinction of animals and plants in these local territories of Lake Baikal. Experts believe that the main reason for the spread of this plant species is the release of household waste into Baikal from numerous hotels and recreation centers on the lake shore. These drains are detrimental to the Baikal sponge and are quite acceptable for spirogyra. The spread of spirogyra is taking on an increasingly threatening scale and requires some action to solve this problem.

The main source of Lake Baikal pollution is a person himself. Everyone coming to rest should think about the harm that he can inflict on the nature around us. If don't think about it, in a few years we will lose a beautiful lake, clean water and unique animals. To solve these problems, we propose: to introduce fines for abandoned garbage, washing cars, dishes, washing in Lake Baikal; to prohibit logging on the slopes of ridges, especially near the shores of Lake Baikal; to close all enterprises polluting Lake Baikal; to distribute leaflets urging people to protect the nature of Lake Baikal; conduct conversations with the population, vacationers; carry out wastewater treatment in the Selenga River, Lake Baikal.

In the research, the main negative factors that cause irreparable damage to the natural system of Lake Baikal are stated.

VISCERAL FUNCTIONS OF THE HYPOHTALAMUS

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Many structures of the hypothalamus take part in the implementation of visceral functions acting as the main integration center. The posterior cores of the hypothalamus are responsible for increasing blood pressure and pupils dilating. The ventromedial cores are responsible for satiety, the pre-mastoid cores - for hunger, the mastoid bodies - for food-producing reflexes, the arcuate core makes neuroendocrine control, the supracross core is responsible for the functioning of the bladder, lowering the cardiovascular system (CVS) and blood pressure. The supraoontic core synthesizes vasopressin. The foresight field regulates body temperature, wheeze, sweating, inhibiting the production of thyroid-stimulating hormone (TSH).

The participation of the hypothalamus in behavioral reactions has been established experimentally on experimental animals.

ORAL HYGIENE

An V. – the 3rd year student
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Oral hygiene at home removes accumulated food debris and soft plaque. Brush and paste alone is not enough to completely clean all surfaces of the teeth and interdental spaces. The procedure should include the use of mouthwash, dental floss, or irrigator. When wearing orthopedic structures or braces, it is also necessary to use dental brushes.

Professional cleaning by a doctor is aimed at: removing of hard dental deposits (supra- and subgingival tartar); removal of pigmented plaque from smoking, coffee and tea; enamel surface polishing; identification of caries at the initial stage. Professional hygiene of teeth and oral cavity is not only a method of prevention, but also an obligatory stage before any dental procedures - from whitening to surgical interventions.

It is best to select hygiene products in conjunction with a doctor, taking into account individual characteristics and a tendency to certain oral problems. We must not forget that once prescribed medicinal pastes and rinses are not suitable for continuous use. So, when abused, fluoride products can lead to dental fluorosis. And drugs with antibacterial components, with prolonged use, cause candidal stomatitis.

Professional oral hygiene is required at least once every six months. It includes such stages as: ultrasonic treatment (skiling); Air Flow cleaning; polishing with a brush and paste; fluoridation, calcination.

A scyler device is used for ultrasonic cleaning. By generating vibrations, it helps to free the enamel surface from dental deposits. Scaling is used to remove calculus and plaque from the visible surface of the teeth and under the gum. Before this, at the request of the patient, anesthesia can be performed.

For final polishing, a rotating brush and highly abrasive paste are used. After rinsing the mouth, a mineralizing gel with fluoride and calcium salts is applied to the surface of the teeth to prevent caries and prevent hypersensitivity.

RED NUCLEUS. SYNDROMES OF ITS LESIONS

Grebneva V. – the 4th year student
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The red nucleus is the formation of the midbrain involved in the coordination of movements. Due to the abundant vascularization, on a fresh cut this formation has a pink hue. Therefore it actually got its name. It consists of caudal magnocellular (large-cell) and rostral parvocellular (small-cell) parts.

The red nucleus receives afferent information from the cerebellar and dentate nuclei, the large hemisphere cortex, and the midbrain roof. Efferent fibers form the rubrospinal and rubroreticular tracts.

Syndromes of red nucleus lesions.

1. Foix syndrome is an upper red core syndrome. Etiology: lesion of the anterior parts of the red nucleus and medial loop fibers. Clinic: intensional tremor, choreathetosis, hemihyposthesia on the contralateral side.

2. Claude syndrome is an inferior red core syndrome. Etiology: lesion of the posterior red nucleus, superior cerebellar peduncle, and oculomotor nerve. Clinic: ptosis, divergent strabismus, mydriasis - on the affected side; hemiparesis, adiadochokinesis, hemiataxia, dysmetria - on the contralateral side.

3. Benedikt's syndrome. Etiology: occlusion of the interpeduncular branches of the basilar and posterior cerebellar arteries; lesion of the red nucleus, medial loop, black substance and oculomotor root fibers. Clinic: ptosis, mydriasis, divergent strabismus, paresis of accommodation and covergence - on the affected side; rigidity, hyperkinesis, hemihypesthesia - on the contralateral side.

TREATMENT OF TROPHIC ULCERS OF VASCULAR ORIGIN USING PLASMATHERAPY

An V. – the 3rd year student
Supervisors: O.O. Kalyulzhina, O.I. Katina

Trophic ulcers of the lower extremities have become the object of doctors' attention even during the existence of ancient civilizations. Hippocrates believed that ulcers of the lower extremities were associated with enlarged veins, the treatment of which was proposed to be carried out by puncturing the dilated veins and bandaging of the lower extremities. Currently, there is no universal set of therapeutic measures that effectively affect the healing of ulcers.

The appearance of a trophic ulcer is preceded by a number of symptoms indicating decompensation of the blood outflow from the lower extremity. The progression of impaired venous outflow against the background of varicose or post-thrombotic disease leads to increased leg edema, pain in the lower extremities, night cramps, and itching. Extravasation of blood plasma corpuscles and proteins into soft tissues is clinically manifested by the formation of age spots, induration of subcutaneous tissue. Further on, the zones of hyperpigmentation and liposclerosis merge, the skin thickens, becomes tense, motionless, painful. The decay products of blood cells accumulating in soft tissues, possessing antigenic properties, cause an inflammatory reaction manifested by skin hyperemia and eczematous dermatitis. This is also facilitated by the direct damaging effect on tissues of reactive oxygen species and cationic proteins of neutrophilic granulocytes. The destruction of the lymphatic plexus leads to lymphedema. The skin of the lower leg assumes as an "orange peel". Subsequently, in the zone of the greatest pathological changes, a focus of exfoliation of the epidermis appears that outwardly looks like a whitish spot, reminiscent of a paraffin leak. This pre-ulcer condition is called white skin atrophy. Any method of infected wounds treatment should be aimed at maximizing the shortening of the periods of alteration and exudation, early formation and growth of full-fledged granulation tissue and stimulation of the regeneration phase.

The patient undergoes necrectomy, removal of non-viable tissues (in places of necrosis or gangrene). The impact on the trophic ulcer of the platelet-rich plasma of the patient's own blood, leading to the activation of regenerative processes. After that, a skin transplant is performed on the wound site.

ABNORMALITIES OF OVARIAN DEVELOPMENT AND SIGNIFICANCE FOR GYNECOLOGICAL PRACTICE

Shesher T.- the 2nd year student
Supervisors: Cand.Med.Sc., assoc.prof. S.S. Seliverstov, O.I. Katina

An anomaly is an abnormal deviation of the form- structure, leading to a violation of a function, but the body remains viable. Abnormalities of ovarian development are quite diverse. The least common is the complete absence of one or both ovaries. More often, women are diagnosed with

the presence of an additional sex gland consisting of ovarian tissue islands adjacent or attached directly to the ovary – a cystic anomaly. It is also not uncommon to find hypertrophied ovaries that are significantly larger than normal. Such changes occur due to an increase in the follicular layer and practically have no effect on the normal functional activity of the genital gland. Also, congenital ovarian torsion refers to abnormalities of ovarian development. Abnormal ovaries are often located in unusual places for them, for example, in the inguinal canal.

Ovarian malformations need mandatory treatment and maximum attention, since foci of blastomatous growth quite often form in the tissues of such genital glands. That threatens not only the health, but also the life of a woman. Treatment of ovarian malformations can be both conservative and operative. The doctor selects the method of therapy individually, based on the data obtained during the examination. The scope and method of treatment directly depends on the nature of the pathology, the form of gonadal dysgenesis, the severity of clinical manifestations and other factors. Complete cure of ovarian malformations is impossible. Symptomatic treatment consists in the appointment of hormone replacement therapy in order to prevent metabolic disorders. Often, pathology requires surgical treatment that consists in the removal of an abnormal sex gland.

MEDICAL AND BIOLOGICAL SITUATION WITH THE CORONAVIRUS IN THE PRIMORSKY REGION

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On November 14, 406 new cases of COVID-19 infection were detected in the Primorsky Region. Since the "third wave" of the epidemic, the daily number of cases has doubled. According to the operational headquarters, a total of 81.506 cases of coronaviral infection have been identified in the region since the beginning of the pandemic."At the moment, 502 patients are in serious condition, 92 of them are on noninvasive positive pressure ventilation (NIPPV). Over the past day, four people have not coped with the disease. The number of beds in medical institutions is filled by almost 70%," the specialists said.

654.390 people were vaccinated against coronavirus. The mortality rate for today is 1.62%.

POLYCYSTIC OVARIAN SYNDROME

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Polycystic ovarian syndrome (PCOS) is a polygenic endocrine disorder caused by both hereditary and environmental factors. The leading features of PCOS are hyperandrogenism, menstrual and/or ovulatory dysfunction, and polycystic ovarian morphology. Increased androgen synthesis, impaired folliculogenesis, and insulin resistance are in the pathophysiological basis of PCOS. An intriguing concept suggests the perpetuation of a vicious circle with endocrine/reproductive and metabolic components. An unfavorable metabolic environment can reveal genetic signs of ovarian dysfunction, and a developing endocrine disorder can further exacerbate the metabolic disorder.

PCOS is one of the most common endocrine disorders in women of reproductive age. Chronic anovulation in women with PCOS is a risk factor for endometrial hyperplasia and cancer, which is greatly facilitated by the presence of overweight or obese in 40-85% of women with PCOS. Along with reproductive disorders, PCOS, especially its classic phenotype, is associated with insulin resistance (IR), impaired glucose tolerance (IG), diabetes mellitus (DM), cardiovascular diseases, which determines the long-term consequences of this disease.

The prevalence rates of PCOS depend on the diagnostic criteria used and the peculiarities of the population sample. In the general population of women of reproductive age, the syndrome prevalence ranges from 6-9% to 19.9%. According to various studies, the incidence of PCOS among women with NMC ranges from 17.4% to 46.4%. In patients with clinical manifestations of hyperandrogenism PCOS is the leading cause, reaching 72.1%-82% when various criteria are used. And in women with anovulatory infertility PCOS is detected in 55%-91% of cases.

Thus, among the leading ovarian structural changes in polycystic syndrome, the follicular compartment reduction was in the foreground due to progressive dystrophy and atrophy of follicular epithelial cells, reduction of protein synthesizing organelles and decrease in biosynthetic reactions. Synchronously, sclerotic changes in the stroma of the cortical and brain layers and significant sclerotic deformation of the vascular system developed. It is important to note the systemic nature of the pathological process - degenerative-dystrophic changes of the follicular apparatus were found in the affected and "unaffected" ovary that probably allows us to consider this phenomenon as ovariopathy of neuro-obmeno-endocrine genesis. The pathomorphogenesis of ovariopathy in the neuro-obmeno-endocrine syndrome corresponds to a primary dystrophic process with an outcome in atrophy of the parenchymatous component and reactive sclerosis of the stroma.

In numerous studies, as a result of therapeutic correction of ovarian dysfunction, positive clinical effect and structural dynamics of the ovaries (according to ultrasound examination) were obtained. Normalization of hormonal and lipid profiles, correction of metabolic disorders and body weight were revealed. That led to the restoration of menstrual and generative functions in most cases.

TRUTH SERUM

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“Truth serum” is a conventional name for psychoactive substances used (most often by security services) to obtain hidden information by people.

In the process of “truth serum” production the following substances were involved: mescaline; scopolamine; anabazine; amytal and sodium pentothal; barbiturates, etc.

Scopolamine is an odorless anticholinergic agent in the form of a white crystalline powder, easily soluble in alcohol and water. It causes dilation of pupils, accommodation paralysis, palpitation, relaxation of smooth muscles, decreased secretion of digestive and sweat glands, xerostomia. It also has a central anticholinergic effect. It is usually sedative decreasing physical activity. Scopolamine is characterized by the amnesia that it causes.

Sodium thiopental. A mixture of sodium thiobarbituric acid with anhydrous sodium carbonate. It slows down the closure time of GABA-dependent channels on the postsynaptic membrane of neurons in the brain, extends the time of entry of chlorineions into the neuron and causes hyperpolarization of its membrane.

Sodium amital. Ethyl ester of isoamylbarbituric acid. It acts in the same way as sodium thiopental, but more "delicately". The effect of the app comes on more slowly and lasts longer.

Mescaline is a drug from the Mexican peyote cactus. Scientific experiments have shown that during the action of mescaline, will is suppressed.

VARIANTS OF THE GALL BLADDER STRUCTURE AND THEIR SIGNIFICANCE IN SURGERY

Anichkin O. – the 2nd year student
Supervisors: Cand.Med.Sc., assoc.prof. S.S. Seliverstov, O.I. Katina

The biliary system has a wide range of individual variability. The relevance of studying the variant anatomy of the gallbladder and biliary tract is due to the increase in the number of surgical interventions on the liver and biliary tract: liver transplant operations, laparoscopic cholecystectomy, and surgical treatment.

The neck of the gallbladder is its first part, the part from which its cavity sets. The body of the gallbladder is its middle part located between the neck and the bottom of this organ. It is medium in location but not in size. The bottom of the gallbladder is that part of it that extends below the body and is most distant from the bile reservoir exit. Function of the gallbladder: collection of bile from the liver and regulation of its excretion into the duodenum, depending on the food intake.

The gall-bladder is an oval or pear-shaped small oblong formation. But the perfect shape of the gallbladder is not always. In many cases kinks and constrictions are seen that violate its shape. There can be one inflection point. But quite often, there are two or even three inflections. They are located in the neck, middle or bottom area. In these cases, the organ can take a variety of forms: a Phrygian cap-like form; S-shaped; U-shape. The shape of the gallbladder can change depending on the position of the person's body and on the digestion phase. When the position of the body changes, the inflections can disappear and the organ itself takes the correct shape. Constrictions never disappear, no matter how a person changes the position of his body.

Septa are much less common. They can be complete or partial, single or multiple. Septa also change the shape of the organ and divide its cavity into unequal parts. More often they are located in the neck area, rarely – in the middle and almost never – in the bottom area.

The normal dimensions of the gallbladder are as follows: length - from 80 to 140 mm, usually no more than 30-40 mm wide. Normally, the size of the gallbladder increases if a person is fasting for a long time, and decreases after a meal, especially after an abundant intake of fatty or protein foods.

The shape of the gallbladder in newborns and infants is often spindle-shaped, without the severity of the body of the gallbladder. In the process of the child's growth, the shape of the bubble changed from spindle-shaped to cylindrical, and then drop-shaped, less often the S-shaped form was noticed. In newborns and children under 5 years of age, the gallbladder was projected more laterally than in adults. The most significant increase in gallbladder volume occurred in children of the second childhood between the ages of 8 and 12, where the volume increased in twice. The next sharp increase in the gallbladder was observed in adolescents - up to 20.6 + 11.9 cm3. In the age group, there were large fluctuations in the volume of the gallbladder - from 3.7 cm3 to 40.2 cm3, which is apparently associated with different physical development of children.

Variants of the bile ducts structure: long cystic duct; the short cystic duct is vesicular; the duct terminating into the right hepatic one; the presence of two cystic ducts entering into the common hepatic duct.

Knowledge of the variant of the gallbladder anatomy is of great importance in surgery for various operations on the liver and biliary tract. It helps to distinguish a variant of the norm from a pathology and successfully diagnose.

OUTPATIENT CARE FOR THE ADULT POPULATION IN YAKUTSK FOR 2018-2020

Sabutskaya V., Shpis A. – the 2nd year students
Supervisors: Cand.Biol.Sc., assoc.prof. L.A. Guba, O.I. Katina

Outpatient care for the adult population in the field of "traumatology and orthopedics" is provided by the trauma department. Medical assistance includes preventive, therapeutic, diagnostic and rehabilitation measures aimed primarily at reducing morbidity, disability and mortality. In addition, the emergency medical care is provided, regardless of the patient's place of residence.

For the period from 2018 to 2020, a decrease in medical procedures was recorded in Yakutsk. But despite a decrease in 2018, 63991 applications were registered, 27187 (42.5%) of them encountered the emergency care. In 2019, the number of calls was 58378 and 24999 were for emergency care. In 2020, the total number of calls for trauma was 49180, 23698 were for emergency care that is 48.2% of the total.

According to the statistics, most injuries were received as a result of domestic and street accidents. So in 2018 it amounted to 10985 household and 12259 street accidents, in 2019 there was a decrease in street injuries, 9877 cases, and an increase in household injuries to 13019. In 2020, there was a trend towards reduction of both domestic injuries - 11684, and street injuries - 8837, compared to 2019.

RATIONAL NUTRITION AND ITS SIGNIFICANCE FOR HEALTH

Borisov F.– the 3rd year student
Supervisors: Doc.Med.Sc., prof. N.V. Korshunova, O.I. Katina

The most important factor in health maintaining is a good rational diet. Rational nutrition is a balanced diet of a healthy person considering the gender, age, work and climatic living conditions.

With food, a person receives all the necessary elements that provide the body with the energy needed for the growth and maintenance of the vital functions of tissues. The nutrients, the body needs, are subdivided into six main types: carbohydrates, proteins, fats, vitamins, minerals, and water. Rational diet means getting with food everything that body needs in sufficient quantities and in the right combination.

Carbohydrates are organic compounds made up of carbon, hydrogen and oxygen. They are found in all foods, but especially in cereals, fruits and vegetables. According to their chemical structure, carbohydrates are divided into two groups: simple and complex carbohydrates. The basic unit of all carbohydrates is sugar glucose. Glucose is a simple sahharide.

There are 20 types of amino acids. A compound consisting of a large number of amino acids is called polypeptide. Each protein is polypeptide by its chemical structure. The majority of proteins contain on average 300-500 amino acids residues.

Vitamins are organic chemical that the body needs for normal growth, development and metabolism. Vitamins don’t belong to carbohydrates, proteins or fats. They are composed of other chemical elements and don’t provide the body with energy.

THE NATURE OF AUDITORY HALLUCINATIONS

Lyalina A. - the 4th year student
Supervisors: M.I. Arkhipova, O.I. Katina

Hallucinations are false or distorted images and phenomena, a deceptive sensual perception of the world arising under external influence as a result of illness or under the influence of chemicals in a changed state of consciousness other than usual. The most common type of hallucinations is when a person "hears voices". They are called verbal hallucinations.

Research on the nature of this phenomenon has been conducted long ago: psychiatrists and psychologists have been trying to understand the causes and phenomenology of auditory hallucinations for about a hundred years.

One of the first to investigate this phenomenon was professors Philip McGuire and Sukhi Shergill of King's College London. They noticed that Broca's zone in their patients was more active during auditory hallucinations - compared to moments when voices were silent. This suggests that auditory hallucinations are produced by the speech and glossal centers of our brain. The results of these studies led to the creation of intrinsic models of auditory hallucinations.

English neuroscientist and neuropsychologist Chris Frith and other scientists assumed that when we enter the process of thinking and internal speech, the Broca's zone sends a signal to the area of our auditory cortex called the Wernicke zone. This signal contains information that the speech we perceive is also generated by us. This is due to the fact that the transmitted signal presumably mutes the neural activity of the sensory cortex, so it is activated not so intensively as from external stimuli, for example when someone is talking to you. This model is known as a self-monitoring model. And it suggests that in people with auditory hallucinations, this process is deficient. That is why they cannot distinguish between internal and external speech.

THE SUICIDE NATURE

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Suicide and attempted suicide are a serious public health problem in many parts of the world. At the moment, Lithuania is in the first place in the world in terms of the number of suicides per 100 thousand inhabitants. And the second place, unfortunately, belongs to Russia. If Lithuania has 31.9 people per 100 thousand inhabitants, then in the Russian Federation it counters 31 people. We overtook Guyana in this black statistic with 29.2 people and Korea with 26.9. This indicator in Belarus is 26.2, in Kazakhstan - 22.5.

Almost all over the world, men commit suicide much more often than women in 1.8 times. At the same time, in high-income countries, this gap increases to almost three - while in poorer countries, the numbers of male and female suicides differ slightly. If on average there are about 1.8 times more women who commit suicide in the world, then in Russia this gap is several times higher than the world average: Russian men kill themselves 6.5 times more often than women. More than half of all suicides are committed by people under the age of 45. Among young people aged 15 to 30, it is the second most common cause of death after road traffic crashes.

Suicides are conditionally divided into true ones, when the goal is a person's desire to take his own life, and demonstratively - blackmail, which are used to exert pressure on others, to extract any benefits, to manipulate the feelings of other people.

Suicide can be triggered by a variety of mental illnesses, including bipolar disorder, depression, schizophrenia, mature personality disorder, etc. One of the most common reasons for suicide among people without severe mental illness is problems in their personal life. Driving to suicide should be distinguished into a separate category of suicide causes. Teens commit suicide because of conflicts with parents and peers, or because of unhappy love.

Suicide theories have a longer history than the theories of many other contemporary social problems. The first to succeed in this matter was E. Durkheim "Suicide" (1897). Modern theories explaining the causes of suicide are based on sociological, psychodynamic, biological, cognitive and acquired orientations of human behavior.

There is also the theory of the suicides landing, when at the very last moment the realization of the ease of their problems in life comes. And then, is it correct to say that this is demonstrative suicide or is everything also true? This is what a suicide survivor who tried to commit suicide by jumping off a bridge said. "All problems can be solved. Except for one. You are already flying from the bridge".

IMPLANTATION IMMUNITY

Mogilnik P., Anichkin O., Vinokhodova S. - the 2nd year students
Supervisors: assoc.prof. T.L. Ogorodnikova, O.I. Katina

Modern transplantation combines a number of the most important interrelated problems - transplant immunology, organ and tissue conservation, clinical and experimental transplantation.

The need for transplant operations arises when an organ or part of the body loses the ability to perform its functions. This could be due to a congenital anomaly, illness, or severe injury.

Numerous studies have firmly established that the transplantation of any organs and tissues causes a general biological reaction - tissue incompatibility, which cause is the immunological conflict between the host organism and the transplant (i.e. between the recipient and the donor) due to antigenic differences.

Transplant immunity is a complex of immune reactions that develop in response to the transplantation of foreign tissues or organs.

Transplant antigens contained in almost all nucleated cells of the body plays the main role in transplant immunity. However, their quantitative distribution in different tissues is not the same. Reticuloendothelial tissue, skin, lymphoid cells are rich in transplant antigens; bone, cartilage, muscle tissue are relatively poor in them.

The study of transplant allows to find ways to overcome tissue incompatibility contributing the transplant to take root. At present, the most popular methods of suppressing transplant immunity are careful donor selection and the use of immunosuppression.

SLEEP AND ITS DISORDERS

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Sleep is a condition in which hypnogenic brain structures are in an active state, producing hypnogenic biologically active substances and mediators.

The usual duration of a night's sleep is 7-8 hours. This period consists of several (4-5) identical "parts", which are called cycles. Each cycle includes a certain sequence of phases and stages.

The International Association of Centers for the Study of Sleep has proposed a classification of sleep and wakefulness disorders based on the features of their clinical manifestations. It is based on several groups of syndromes among them the widespread are: violation of falling asleep and sleep duration (dissomnia or insomnia) and excessive sleep duration (hypersomnia).

Insomnia (dissomnia, agripnic syndrome) is literally insomnia. In practice, it is more correct to interpret insomnia as dissatisfaction with sleep.

At present, convincing evidence has been obtained that insomnia may have genetic character - the prevalence of insomnia is higher among monozygotic twins compared with dizygotic ones. In persons who are in the first degree of kinship, insomnia develops from 35% to 55% of cases. That is much more than in the general population. These associations turn out to be stronger when inherited through the maternal line. It is assumed that vulnerability to the development of stress-induced sleep disorders may be genetically determined and inherited in 29% of women and 43% of men.

In the development of insomnia in relatives, in addition to genetic predisposition, it is also necessary to take into account the influence of the environment (noise has become an urgent problem in this matter leading to sleep deterioration), the presence of learned behavior (for example, observing the behavior of parents), psychopathological personality traits.

Excessive sleep, somnolence, hypersomnia is the diametrically opposite of insomnia sleep disorder.

The problem of sleep disorders is still relevant to this day, and insufficient knowledge in this area slows down the finding of its solution.

SPECIFIC PREVENTION OF CORONAVIRUS INFECTION, COVID-19

Makitryuk D., Balabanova D. – the 5th year students
Supervisors: Cand.Med.Sc. A.V. Zotova, O.I. Katina

General preventive measures against acute respiratory viral infections, including a new coronavirus infection COVID-19, are well known. Leaflets and information about them can be seen in all medical institutions. Specific prevention is the immunization of various groups of the population. Immunization is the process by which a person acquires immunity, or becomes insusceptible to an infectious disease, usually by administering a vaccine. The goals of this type of prevention: prevention, spread restriction and elimination of infectious diseases, the individual protection of vaccinated persons, and the formation of population immunity.

Prevention of new coronavirus infection through immunization of population groups began at the beginning of December 2020. At present only domestic drugs are used in our country. To date, at least three domestic vaccines are known: Gam-Covid-Vac (Sputnik V), EpiVacCorona, CoviVac. Issues of safety and efficacy of vaccines are actively studied all over the world. Foreign types of vaccines are also known, they include: Pfizer/BioNTech and Moderna. Today they are used for vaccination in Great Britain, Israel, European Union countries, Ukraine, the USA and other states. AstraZeneca vaccine is made on the principle of Sputnik V drug. The epidemic is supposed to decrease if there are a large number of vaccinated people or already infected persons.

This paper reviews the main types of vaccines against the new coronavirus infection COVID-19, their differences from each other. And the results of recent data on their use in clinical practice are discussed.

ANALYSIS OF EMERGENCY SITUATIONS POSSIBLE FOR THE AMUR REGION

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In the modern world, a deep and comprehensive analysis of the problems associated with the manifestation of certain emergency situations (emergencies) occupies a special place in assessing the effectiveness of measures to eliminate their catastrophic consequences. In some regions of the world, the population density is so high that any, even a minor accident, at any production facility or a certain natural phenomenon can cause enormous damage, take a lot of human lives and irrevocably cause irreparable harm to the health of people in this territory. Moreover, the destructive effect of such incidents directly depends on the readiness for them.

The climate of the Planet has changed a lot under the influence of a huge number of anthropogenic factors over the past century and a half. Cataclysms change along with nature. And it happens in two directions. New previously unknown natural blows arise or the usual blows of the elements intensify significantly. With the development of scientific and technological progress, the branches of the economy are also developing. To meet the growing needs of the population, it becomes

necessary to search for either new forms of products or innovative methods of creating already familiar and accustomed goods and means of production. The risk of man-made accidents is likely to increase with the use of any untested technologies. Capitalists often neglect the necessary probation periods, safety measures, carrying out special instructions for employees of especially dangerous production facilities, compliance with the rules for the production and testing of food, medicines, vaccines, etc. They often do not care about ecology. In a word, the economic system itself is the initiator of problems that throw new challenges to a person.

The Amur Region is as much a part of the world as any other regions, with its own problems and difficulties. Over the past 100 years, we can observe a cardinal increase in the influence of human activity on nature: the most powerful hydroelectric power plants were built causing the change in the geological and atmospheric water balance of the territory, thermal power plants, shipyards, many light and food industry enterprises were founded. With the destruction of most of the industrial and resource potential of the USSR, protective measures regarding the protection of the ecology of the region, however, were not preserved with the necessary attention, as if they had receded into the background. But the city-forming enterprises (shipbuilding and ship repair, food industry, and electrical equipment and machine tool factories) began to go bankrupt at an active pace. Agriculture also comes into recession (many agro-industrial complexes, state farms and collective farms have ceased to exist). The place of "economically unprofitable" producing elements of the economy has been taken by trading bases, sawmills. In recent years such giants as the gas pipeline and the Vostochny Cosmodrome have grown. Unfortunately, they do not have any real economic significance for the region and do not contribute to its full development. Valuable forest and recreational resources are being destroyed at a rapid pace. The profit from their irrational use goes to China through the cheap sale of raw products to the latter and the import of finished products produced on the territory of our "eastern partner". All these factors could not but hit the ecology of the region. Thus, last natural disasters intensified (floods of 2013, 2021) and new phenomena arose (for example, tornadoes in 2011). The inluence of anthropogenic factors has also increased (frequent fires, pollution of rivers).

Studying possible emergencies on the territory of the region, classifying them by origin, degree of danger, as well as methods of their prevention or elimination of their consequences, we thereby identify the main directions for ensuring an adequate level of safety of the population of the Amur region. We will find key ways to solve problems for the prevention of the harmful effect of emergencies. The most important aspect, the result, the goal should not be a simple reasoning about the state of things, as a statement of a certain set of facts, but elaboration and conclusions that do not need to be dug too deeply: history itself, nature and man reveal to us the veil of their secrets, point out our mistakes. Today is the time to correct them. Otherwise there may no longer be such a chance, and the point of no return will be forever passed. It's already final.

INFLUENCE OF K. MARX'S CONCEPT ON THE DEVELOPMENT OF MEDICINE

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The philosophy of Karl Marx had a significant impact on the development of medicine in the 20th century in the socialist countries. Marxism-Leninism became the foundation of Soviet medicine. As any philosophical teaching, Marx's philosophy is a worldview being a combination of dialectical and historical materialism. The physicians of that time were materialists and used this method in their research, so as most modern physicians.

Within the framework of the dialectical concept, the Marxists formulated the laws of dialectics that help in solving many medical issues. The law of the unity and struggle of opposites is the basis

of materialist dialectics. It explains the internal source of movement of certain processes. So, for example, one of the main problems in the work of a general practitioner is the contradiction between knowledge of the essence of the disease, knowledge of the general type of clinical manifestations and lack of knowledge about the specific causes of the onset of the disease and its treatment.

The law of the transition of quantitative changes to qualitative ones, that is, with certain quantitative changes, the quality necessarily changes. The doctor, in turn, must delve into both the qualitative and quantitative characteristics of the observed disease. Also, the doctor should take into account that when the threshold level of the quantitative indicator is reached, the quality changes dramatically.

The law of denial of negation is closely related to the two previous laws. This law describes the tendency of development of nature or organism, society or thinking. The basic laws of dialectics are a necessary part of clinical thinking. But there are so-called categories - basic scientific concepts that describe the most important properties, characteristics, and features of the disease. Categories reveal the content and operation of the basic laws being necessary for understanding the cause, essence and content. Any disease consists of external manifestations of the disease - symptoms (phenomenon), and the very cause of the disease is the causative agent (essence). Form and content are the unity of opposites.

Marxist teaching tried to reveal the main issues of theoretical medicine. One of the most important issues is the question of the relationship of the organism with the external environment. The solution of this issue will provide a key to solving a number of other important problems. According to the teachings of Marxism-Leninism, man is "... a product of nature, developed in a certain natural environment and together with it". Man, therefore, is viewed in development and in unity with the surrounding nature and, moreover, as a product of this nature, as a derivative of it. The question of the relationship is decided by the subordination of nature to man.

Thanks to the carefully developed Marxist-Leninist concept, medicine is subjected to deep theoretical and practical substantiation, acquiring the principle of prevention. Although the prevention itself cannot cure the disease. But it is able to eliminate the disease, or at least reduce its probability. Also, Marxism-Leninism claims that prevention is powerless as long as the environment dominates the person and society. As N.I. Pirogov said - "The future belongs to preventive medicine".

The teaching of Marxism-Leninism about the leading role of the nervous system in the body is of tremendous organizing and guiding importance for Soviet medicine. The first indication of this role of the nervous system in the body was made by F. Engels in one of his notes on "Dialectics of Nature" in the 70s of the last century. This doctrine is deeply dialectical: the nervous system, primarily the cerebral cortex, is one of the later formations in the animal organism, but it is this later formation, having developed to a certain extent, "takes possession of the whole body", controls all its life processes, is precisely the leading system in an animal organism. K. Marx emphasized the secondary role of the brain in human behavior. He wrote: “... Everything that prompts a person passes through his head: even for food and drink, a person is taken under the influence of the feelings of hunger and thirst reflected in his head, and stops eating and drinking because the feeling of satiety is reflected in his head".

The philosophy of Karl Marx, together with the philosophy of Engels and Lenin, had a decisive influence on the development of medicine in the twentieth century. Thanks to their philosophical concepts, many problems were solved.

ATYPICAL FORMS OF MULTIFORME ERYTHEMA ASSOCIATED WITH HERPES SIMPLEX

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Supervisors: T.A. Dolgikh, O.I. Katina

Erythema multiforme (EM) is an acute self-limiting syndrome with distinctive skin lesions with or without mucosal lesions. An association of the syndrome with recurrent herpes simplex virus infection has been known for a long time. Recently, an association between erythema multiforme and herpes simplex has been established in people who have never manifested clinical signs of herpes infection.

The diagnosis of EM is based on the clinical manifestations supported, if necessary, by biopsy.

EM patterns can be classified as EM with and without mucosal lesion: mucous membranes of the oral cavity, the genitals, eyes, larynx, and esophagus may be affected.

Oral lesions may follow the lesions on other sites or may arise in isolation. It is usually presented by lesions progressing through diffuse macula to blisters and ulceration. Lips become swollen, bleeding, and crusted.

A characteristic histopathological finding of EM is necrosis of some keratinocytes and epidermal damage in the form of basal cells.

PCR is performed to confirm the diagnosis as well as to exclude other diseases such as autoimmune mucocutaneous diseases, in particular pemphigus vulgaris and paraneoplastic pemphigus, mucosal bullous pemphigoid, and linear IgA dermatosis bullosa.

In patients with recurrent episodes, especially with HSV-1 and HSV-2 infection in a past-history, antiviral therapy is recommended. It may be useful in preventing recurrences. The study showed that acyclovir at a dosage of 400 mg is more effective in the treatment of patients with ME associated with HSV. Acyclovir is not only for treatment, but also for the prevention of relapse.

Due to its typical clinical and histological features, its frequent association with HSV, and its potentially recurrent course, EM represents a distinct entity. As there are no specific diagnostic tests, early clinical recognition of disease remains to be essential for timely beginning of the appropriate treatment and improvement of life quality.

FEATURES OF THE BOTULISM COURSE AT THE PRESENT STAGE

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Botulism is infectious disease from saprozoonosis group, with a fecal-oral transmission mechanism. It develops as a result of eating foods in which there has been an accumulation of the toxin of the pathogen blocking the transmission of nerve impulses. The causative agent of botulism is Clostridium botulinum. It is widespread in the soil and forms spores resistant to physical and chemical factors. Its reservoir is warm-blooded or rarely cold-blooded animals containing clostridia in their intestines. The pathogen itself doesn't cause human disease, only the toxin is dangerous.

Atypical variant of the course has become more common at present (an unclear clinical picture, a significant predominance of the leading syndrome). Thus, a significant number of diagnostic errors are made. The disease manifests suddenly in some hours after food. Before, earlier clinical manifestations were: muscular weakness, feeling of nausea, dry mouth, and dyspeptic disorders. Today the following signs are common: a feeling of "sinking" of the heart, headache, weakness, intestinal paresis, abdominal pain, nausea, vomiting. In a few hours or 1-2 days, vision is impaired: complaints about "flies" in front of the eyes, objects are indistinctly visible, often diplopia, mydriasis, ptosis of the eyelids are often noted. Later, it may be accompanied with dysphagia dysarthria,

dysphonia. Then suffocation, unexpected pauses during a conversation, a feeling of tightness in the chest appear. It is the respiratory insufficiency that is the cause of death of such patients. If not use the modern methods of treatment, the death-rate from botulism is 30-60%.

On average about 200 people suffer from botulism in Russia every year. In the first half of 2020, 60 people suffered from botulism and 6 of them were fatal (10%). The reason is the untimely request for help. Today on admission of patients with botulism clinical manifestations of botuloinfection are taken into account on the first day and on 3-4 days from the onset of the disease. With a mild form of botulism, the diagnosis is established in 1-2 days from the beginning of the clinic in 100% of cases. All patients with this form develop gastrointestinal syndrome. In 60% of cases, diplopia is present at the beginning of the disease. With a moderate form, the diagnosis is also made in 1-2 days. In the initial period, 50% have gastrointestinal syndrome. The symptom of diplopia comes to the fore (84%). In severe cases, the diagnosis is made for 3 days or more. In the initial period there is nausea, vomiting, and abdominal pain in 100% of cases. The leading neurological symptom is diplopia (100%).

The features of the botulism course of varying severity at the present time are noted in this report.

HISTORY OF CORONAVIRAL INFECTION DEVELOPMENT

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There are millions of different viruses in nature, and only a small part of them are capable of infecting humans. There are dozens of truly life-threatening viruses, and most of them are endemic diseases. However, coronaviruses, as the history of the XXI century has shown, can invade entire continents and cause severe consequences for human health. Over the past 20 years, mankind has already faced 3 epidemics of coronavirus infection: severe acute respiratory syndrome (SARS), middle East respiratory syndrome (MERS) and COVID-19 (eng. COronaVIrus Disease 2019). In the course of the disease, SARS is considered to be the most aggressive, but only COVID-19 reached the level of a pandemic.

The SARS epidemic caused by the beta-coronavirus SARS-CoV began in November 2002 in the Guangdong province of China and is the first case of a large-scale spread of coronavirus infection. Within a few months, the epidemic quickly spread throughout China, and also covered Vietnam, Singapore, Thailand, New Zealand and other countries, including the USA and Russia (1 case in Blagoveshchensk, the Amur region). Number of cases: 8098 people. Number of deaths: 774 people.

The first case of a new coronavirus infection caused by the beta-coronavirus MERS-CoV was recorded on September 20, 2012 in Saudi Arabia. The epidemic developed slowly, but the death rate in different countries ranged from 35% to 50%. Number of cases: 2519 people. Number of deaths: 866.

The coronavirus infection COVID-19 is caused by the beta-coronavirus SARS-CoV-2, duplicating the SARS virus genome by 90%. An outbreak of the disease occurred in Wuhan, China's Hubei province in December 2019, but in February 2020, WHO designated the new infection as a pandemic. SARS-CoV-2 has covered almost the entire world: only Antarctica remained the only continent not affected by the coronavirus. At the time of this writing, according to WHO statistics, 2.000.719 cases of the disease were recorded in the world. 127.626 of which were fatal. According to WHO experts the incidence has not yet reached its peak.

It is obvious that coronavirus infections differ in their course from ordinary acute respiratory diseases: various symptoms, obvious clinical manifestations, frequent development of complications,

etc. At the same time, although SARS and MERS are considered to be more dangerous, hundreds more people suffered and died from the new coronavirus infection. Indeed, SARS-CoV-2 spreads significantly faster than its predecessors.

STRESS

Strelnikova V.- the 2nd year student
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Stress is a non-specific reaction of the body occurring under the influence of various extreme factors that threaten to disrupt homeostasis. It is characterized by stereotypical changes in the function of the nervous and endocrine systems.

A stressor is an external, extreme environmental factor that causes stress. Types of stressors: environmental, psychoemotional, social.

There are two types of stress: eustress and distress.

Eustress is an adaptive, protective response to negative factors. It activates, mobilizes the internal reserves of the body and can temporarily improve some physiological functions.

Distress is a pathological reaction. It disorganizes human behavior and adversely affects health.

General adaptation syndrome is a model consisting of three elements or phases that describe the body's response to stress: anxiety stage, resistance stage, exhaustion stage.

Selye Triad:

Under the influence of a stressor, the sympathoadrenal system is activated leading to hypertrophy of the adrenal cortex. Against this background, peripheral vasospasm develops causing a violation of microcirculation and tissue hypoxia. In turn, the development of hypoxia leads to disruption of tissue trophism. And the glandular tissue of endocrine organs is one of the most sensitive to oxygen deficiency. Against the background of hypoxia, thymus subinvolution develops. The functional resistance of the upper digestive tract to aggressive gastric and duodenal juice decreases leading to the formation of erosions and ulcers of the mucous membrane. Also it may be complicated by bleeding from the upper digestive tract.

THE LARGEST TSUNAMIS OF THE XX AND XXI CENTURIES

Pukhov S. – the 2nd year student
Supervisors: Cand.Biol.Sc., assoc.prof. L.A. Guba, O.I. Katina

Tsunamis are very long sea waves occurring when strong underwater and coastal earthquakes or as a result of volcanic eruptions.

On January 31, 1906, an earthquake of magnitude 8.8 on the Richter scale took place near the coast of Colombia and Ecuador. It also affected the West Coast of the United States and Japan. The resulting tsunami killed about 1.5 thousand people.

On February 3, 1923, an earthquake of 8.5 magnitude occurred in Kamchatka. It was the last in a series of earthquakes during the winter of 1923. Most of these earthquakes caused tsunamis in the region. The tsunami on February 3 was especially powerful. The Hawaiian Islands also suffered significant damage.

On July 17, 2006, the tsunami affected the southern coast of the Indonesian island of Java. According to various estimates, from 600 to 650 people died from the natural disaster, 120 persons were missing. 1.800 coastal residents were injured. The natural disaster left 47 thousand people homeless. In the resort town of Pangandaran, the tsunami destroyed almost all the hotels located on the first line of the coast.

On September 29, 2009, as a result of an earthquake of magnitude 8.3, a tsunami appeared off the coast of the island nation of Samoa in the Pacific Ocean. The total number of deaths on the islands of Western and American Samoa exceeded 140 people.

HISTORY OF THE DEPARTMENT OF PHILOSOPHY, HISTORY OF THE FATHERLAND AND FOREIGN LANGUAGES OF THE AMUR GMA

Trubnikova A., Sheshera T. – the 2nd year students
Supervisors: Cand.Phil.Sc. T.V. Gerasimova, O.I. Katina

The history of the department dates back to 1952, when the academy itself was founded. The first head of the department was Efim Nikitich Shestakov. He was transferred to a new post in BSMI from the Irkutsk Institute of Dentistry.

In 1972, on the basis of the new department two new independent chairs were formed: the History of the CPSU and the Political Economy, Philosophy and Scientific Communism that functioned till 1992. The first department was headed by associate rofessor L. P. Kurochkina, the second one – by the candidate of philosophy sciences, associate professor V. M. Barkovski.

The chair was the center of methodological, methodical and educational work at the Institute. The whole education process was directed to the formation of dialectical-materialistic worldview of future physicians.

For a long time, at the chairs circles on the history of the CPSU, political economy functioned. Later, on their basis the students' philosophical club "Me and Time" was organized. The reports of its members were constantly highly appreciated at the regional and interuniversity conferences.

The perestroika that began in the country in the late 1980s demanded cardinal changes in the content of social science teaching. It was necessary to overcome one-sidedness, abandon ideological dogmas and reorient education towards the humanities. In 1992, the Department of Philosophy and Scientific Communism, the History of the CPSU and Political Economy was merged to form the Department of Humanities. And in 2018 it was joined by a block of disciplines of foreign languages, and it received its modern name "Department of Philosophy, History of the Fatherland and Foreign Languages".

Since 1998 and up to the present time, the department has been headed by the associate professor, Doctor of Historical Sciences Anna Ivanovna Kovalenko.

The following socio-humanitarian disciplines are taught at the department: History of the Motherland; Economics; Psychology and Pedagogy; Philosophy; Law; Bioethics; disciplines of the variable part (Socio-humanitarian principles of medicine and Spiritual and moral aspects of medicine). Students continue to improve their communication skills in English, German, and learn Latin. Teachers of the department work with residents and postgraduate students.

Philosophy and Foreign Languages Olympiads are held annually. It has become a tradition to hold students scientific conferences in foreign languages. For many years students from the Academy have taken part in regional and Russian contests in foreign languages, psychology and economics, and have won prize places.

Teachers constantly improve their professional and pedagogical skills through refresher courses and retraining. They also participate in pedagogical competitions and win them.

Many teachers of the department working at our institution in different years are well known in the region and beyond. For example, I.Yu. Kulaskina was a professor of the Department of Philosophy at AmSU. N.M. Astashova has been Vice-Rector for Educational Work of the Amur State Medical Academy since 2010. A.V. Telyuk, General Director of the "Amur Fair", not forgetting his

teaching past, initiated and also became the chief editor of the book series: "Blagoveshchensk, from century to century", as well as "Priamurie, from century to century".

METHODS OF HIV TREATMENT

Sorokoletova A., Dalai-Ool A. – the 5th year students
Supervisors: Cand.Med.Sc. A.V. Zotova, O.I. Katina

AIDS was discovered in 1981, and its cause, the HIV retrovirus, was discovered in 1983. Since then, dozens of antiretroviral drugs have been developed to treat HIV. Different classes of antiretroviral drugs act differently on the HIV virus. And when different drugs are combined, the effectiveness of controlling the virus is greatly increased and the probability of developing drug resistance is reduced. The current standard approach for all HIV patients is the treatment with at least three different antiretroviral drugs.

Scientists have proposed a new treatment for HIV infection, which can completely remove infected cells and restore the immune system. For this, the natural mechanism of renewal of CD4 + T-lymphocytes, which the virus infects, is used.

HIV infects cells of the immune system containing CD4 receptors on their surface. Attaching to these proteins, the virus suppresses the functioning of the immune system due to this a person develops acquired immune deficiency syndrome (AIDS). Without antiretroviral therapy, patients die approximately in 9–11 years after infection. Treatment allows us to extend patients' life into old age. But for this they need to take various drugs to which the virus may become resistant constantly.

One of the mechanisms for the development of such HIV resistance to antiretroviral drugs is the formation of hidden viral reservoirs - a kind of "shelter" for viruses inside cells. In this case, the virus itself is in an inactive state. The pathogen does not divide, does not enter the bloodstream. That is why the medicine does not work.

To eliminate such inactive cells, scientists propose using the so-called "activate and kill" strategy. It involves the use of drugs activating the development of the virus in latently infected cells. Then the pathogen begins to manifest itself, and it is destroyed by the CD8 + T cells of the immune system. This increases the effectiveness of antiretroviral therapy. However, this method has its drawbacks: the toxicity of the drugs, the unpredictable reaction of infected cells, and the effect of suppressing the activity of the immune system.

There is another approach called "rinse and replace". The new method is based on the use of a natural mechanism for maintaining T-cell homeostasis. During it, parts of the activated subpopulations of more mature lymphocytes, including latently infected CD4 T cells, are flushed out of the body. This is due to the migration of less differentiated cells to the organs. There lymphoid cells are born and compete for survival factors.

Known HIV cures have been associated with bone marrow transplants from donors with mutations in the CCR5 genes, making carriers of this mutation immune to HIV. Scientists are currently monitoring an additional 38 HIV patients who have receivedvirus-resistant material.

FIRST AID IN ACUTE ALLERGIC REACTIONS

Maznyak I. - the 2nd year student
Supervisors: Cand.Biol.Sc., assoc.prof. V.V. Zaritskaya, O.I. Katina

In recent decades, there has been a steady increase in the prevalence of allergic diseases. Their nature and severity change. It is necessary to know the causes, mechanisms of development of acute allergic reactions, as well as their clinical manifestations. This will allow doctors to provide emergency medical care in a timely manner.

Allergic reactions in clinical practice are understood as manifestations, the basis of which is an immunological conflict. In the diagnosis of allergic reactions, it is important to identify the allergen, its causal relationship with clinical manifestations and the type of immunological reaction.

Allergic reactions can occur at any age; their intensity varies. The clinical picture of an allergic reaction does not depend on the chemical and pharmacological properties of the allergen, its dose and routes of administration.

If food allergy attacks are noted, they act according to the following algorithm: wash the stomach; put an enema; provide a patient with drinking clean water of at least 2 liters; cause mechanical vomiting; apply adsorbing drugs.

If the forms of allergic manifestations are pronounced vividly, and the patient cannot help himself, he is helped to lie down. At the same time, it is necessary to make sure that his head is turned on its side to prevent the tongue from sinking or vomit entering the respiratory tract. To facilitate breathing, the pressing elements of clothing should be loosened or removed from the patient.

With the help of first aid skills, you can save someone's life.

TO THE ISSUE OF MINIMALLY INVASIVE INTERVENTIONS IN CHOLELITHIASIS COMPLICATED BY MECHANICAL JAUNDICE

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Cholelithiasis is one of the most widespread diseases. According to most studies, from 10 to 25% of the population suffers from cholelithiasis. Female, elderly and senile persons predominate having in most cases severe concomitant somatic diseases that make up the so-called risk group. The modern development of surgery requires the use of the gentlest and minimally invasive manipulations. The main advantages of minimally invasive interventions are a reduction in the traumatic nature of the operation, the frequency and severity of complications, and a reduction in the duration of postoperative rehabilitation.

The treatment results of 73 patients whose cholelithiasis was complicated by mechanical jaundice were analyzed. Mechanical jaundice is a life-threatening condition. The age of the patients ranged from 35 to 85 years, the average age was 61.2±2.3 years. Patients with mechanical jaundice underwent staged treatment. 62 of them had internal drainage - EPST (endoscopic papilla sphincterotomy) with drainage. External drainage was performed in 11 patients in the form of puncture interventions under ultrasound control, percutaneous puncture cholecystostomas were installed in 5 patients, percutaneous puncture cholangiostomas were made in 6 patients. Decompression minimally invasive surgical interventions were performed under local anesthesia.

In 7-14 days after minimally invasive interventions and normalization of liver function, the second stage of treatment (cholecystectomy) was performed. Laparoscopic cholecystectomy was performed in 43 patients, mini laparotomy surgery was performed in 6 and 14 patients for removal of the gallbladder, examination and drainage of the bile ducts, median laparotomy had to be performed. Laparotomies were performed with the technical impossibility of performing EPST (after undergoing resection according to Billrot-2), intraoperative complications of EPST (infringement or breakage of the Dormia basket), retroduodenal perforation and peritonitis, etc. The duration of treatment was 15.7 k/day. 3 patients died. The mortality rate was 4.1%

Conclusions:

1. In the treatment of cholelithiasis complicated by mechanical jaundice in elderly and senile people, the most rational is the use of two-stage surgical treatment.

2. The implementation of minimally invasive surgical technologies for cholelitheasis complicated by mechanical jaundice makes it possible to abandon emergency surgical interventions and perform surgical intervention in more favorable conditions after the stabilization of the general condition of the patient. That contributes to the decrease of postoperative mortality and earlier rehabilitation of patients.

PRINCIPLES OF ANTIBACTERIAL THERAPY FOR SALMONELLOSIS

FirsovaYa.-the 5th year student
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Salmonellosis is an anthropozoonous intestinal infection caused by numerous serovars of salmonella and occurring in the form of localized gastrointestinal, rarely generalized typhoid and septic forms. The relevance of salmonellosis is caused by: high morbidity, frequent occurrence of nosocomial outbreaks, antibiotic resistance of salmonella, severity of localized forms and high mortality in generalized forms. Incidence of salmonellosis in 2020 in Russia is 40.4% higher than the level of the previous year. 4673 cases of diseases were registered (26.570 /0000). The proportion of group D salmonella in the etiology of human salmonellosis pathogens was 82.5%.

According to the recommendations of domestic infectionists, antibacterial therapy for acute intestinal infections is indicated: in severe forms of the disease - regardless of age, and in generalization - a combination of 2 or 3 drugs; for children under 2 years of age with moderate forms of the disease; in mild forms - for children of risk group under one year of age. With gastrointestinal salmonellosis occurring in mild and moderate form, antimicrobial therapy is not indicated. Antibiotics are prescribed with the development of generalized forms and severe course of gastrointestinal salmonellosis. The administration of antibiotics for moderate forms of gastrointestinal salmonellosis is possible only in young children and in persons with a burdened premorbid background. When choosing antimicrobial agents, it is necessary to be guided by the drug resistance of salmonella strains circulating in the region. Starting drugs for the treatment of salmonellosis are: nalidixic acid, nifuroxazide, trimethoprim / sulfamethoxazole, kanamycin, gentamicin, amoxicillin / clavulanate, cefexim. The duration of the therapy course is 5-7 days. Reserve drugs in the treatment of severe and generalized forms of salmonellosis: amikacin, netilmycin, cefotaxime, ceftriaxone, cefperazone, ceftazidime, meropenem, thienam, rifampicin, ciprofloxacin. In nosocomial salmonellosis, therapy begins with reserve drugs. The duration of the therapy course is 7-14 days.

Thus, antibacterial therapy in severe and generalized forms is prescribed in a combination of 2 or 3 drugs. When prescribing antibiotics, it is necessary to take into account the variant of salmonellosis, the severity of the course, concomitant pathology and resistance of the pathogen.

THE IMPORTANCE OF A DAILY ROUTINE ADHERING IN TEENAGERS

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The daily routine is the distribution of time for various activities during the day. The main task of the daily routine is to ensure a high level of efficiency, since the regime itself is drawn up in accordance with the biological rhythm of the body's functioning. Adolescence is a period in a person's life when the formation as a person occurs. The student's health, his future lifestyle, and possibly his career largely depend on what lifestyle a student chooses.

Compliance with the daily routine contributes to: the growth and development of children; increased immunity; healthy sleep; proper digestion; restoration of the nervous system; high

efficiency; cheerfulness for a long time; helps to develop useful habits and skills; helps to strengthen the will.

There are 3 minuses of adhering to the daily regimen. The daily regimen sets certain limits. A teenager is a creative person with his own worldview. And with the regimen, scheduled by the minute, it is not possible to realize everything that was conceived. But nevertheless, it is necessary to adhere to the daily routine going a little beyond it.

There is the impossibility of strict adherence to the daily routine. Unpredictable circumstances can interfere in our life, so it is not easy to comply with the regime.

Taking into account the physiological characteristics of a particular person. Everything should be in moderation. It is imperative to discuss all the details with the child, find out what he would like to do, at what time. The regime is important, but you need to approach this moment responsibly, discuss and take into account all the wishes of the family.

Remember, the correct routine of the student's day is the key to good health and good studies.

SOME FEATURES OF ADENOVIRUS INFECTION

Tolstova I. - the 5th year student
Supervisors: T.A. Dolgikh, O.I Katina

Adenovirus infection (AI) is an acute viral anthroponotic disease with various mechanisms of transmission of the pathogen characterized by a predominant lesion of the mucous membranes of the respiratory tract, eyes, intestines and lymphoid tissue. Pathogens can cause respiratory tract lesions with the development of sinusitis, pneumonia, laryngospasm. The disease is found everywhere. Outbreaks of AI are possible, especially in organized children's groups. The largest number of cases is registered in a winter period.

The causative agents are DNA viruses of the genus Mastadenovirus (mammalian viruses) of the family Adenoviridae. 80 adenovirus serovars are known. Depending on the serotype, an appropriate clinical form is assumed.

The source of AI is a sick person releasing the virus into the environment throughout the disease. Adenovirus conjunctivitis can be a nosocomial infection. Adenoviruses are released into the environment from the upper respiratory tract, with feces. The mechanism of transmission is aerogenic, fecal—oral. Intrauterine infection of the fetus is possible. Mostly children and young people get sick. Seasonality is not crucial, but in the cold season the incidence increases, with the exception of pharyngoconjunctival fever occurring mainly in summer. A feature of adenoviruses is also their resistance to the environment and to the action of certain solvents.

AI syndromes depending on the serovar and transmission routes: intoxication syndrome, respiratory tract syndrome (leading), eye damage syndrome, lymphoproliferative syndrome, intestinal damage syndrome (enteritis, gastroenteritis) and brain damage syndrome (meningitis, encephalitis).

Methods of specific diagnostics: PCR, MFA, ELISA, RSC, RTGA, PH.

The treatment of AI is symptomatic, as there are no specific drug therapies. Specific prevention has not been developed.

Thus, the problem of AI remains relevant due to the wide prevalence, polymorphism of clinical symptoms, the development of complications, the lack of specific prevention and therapy.

ETIOLOGICAL DIVERSITY OF CORONAVIRUS STRAINS

Poloz E., Fischer V. – the 5th year students
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Each virus has its own genome - a unique specific DNA or RNA sequence. The SARS-CoV-2 coronavirus belongs to the group of RNA viruses. As the COVID-19 pandemic develops, the disease-causing SARS-CoV-2 coronavirus mutates. So, its strains can pose a great threat to humans.

The pandemic began with the L strain - it was this strain that was discovered in the Chinese Wuhan in December 2019. Currently the classic version of the virus is gradually disappearing. The rest of the strains are distributed in the countries of the world with different intensities: as a rule, there are no more than two main variations on each continent.

The Wuhan strain is an acute respiratory viral infection characterized by similar symptoms to ARVI. However, it can be more severe than other, mild viruses, leading to severe complications and even death. The most common symptoms of COVID were mild fever, dry cough, and fatigue. Possible manifestations of the virus are sudden loss of smell and / or taste, nasal congestion or mild rhinorrhea, conjunctivitis or redness of the eyes, sore throat, headaches, dizziness. However, those who have had a mild COVID infection compare the sensation to a common cold.

British strain - "Alpha"

The new genetic line of the coronavirus SARS-CoV-2 - B.1.1.7 was first recorded in the fall of 2020 in the UK. It is one of the most common coronavirus variants in European countries, but not in Russia. Rospotrebnadzor claimed that the British strain of coronavirus does not fundamentally differ from the "Wuhan" or other strains, since during the mutation even 1% change in its genome did not occur. And the Russian vaccines "Sputnik V" and "EpiVacCorona" are quite effective against this strain. It has been proven that people infected with the British strain rarely lose their taste and smell. Most of them suffer from cough, sore throat, fatigue, muscle aches and fever.

South African strain - "Beta"

A new variant of the coronavirus SARS-CoV-2 501Y.V2 / B.1.351, known as the "South African" strain, was first identified in South Africa in December 2020. According to the National Institute of Infectious Diseases in Johannesburg, mutations of the new variant of SARS-CoV-2 make it resistant to antibodies in blood plasma, which were donated by patients who have already had coronavirus infection. The beta strain is actively spreading among young people, as it is able to attach to the cells of the body better. The disease when infected with this particular strain proceeds without any concomitant diseases and often leads to serious complications.

Brazilian strain - "Gamma"

In January 2021 in Brazil, scientists announced the emergence of a new strain of coronavirus - B.1.1.248. According to experts, the strain is more infectious and dangerous for young people, and also reduces the effectiveness of vaccines. With the gamma strain, the disease has the standard symptoms of COVID, but the virus itself is at least much more infectious than the original variant. It also knows how to overcome the natural immunity of an already ill population. The Brazilian version was found to be more severe in young people and pregnant women.

Indian strain - "Delta"

This strain was first identified in the Indian city of Napur in October 2020. Doctors believe this strain to be more infectious and able to avoid neutralization with certain monoclonal antibodies. This means that the antibodies appearing in a person who has recovered from COVID-19 may not be effective in the fight against the Delta strain. Patients with the Indian strain often complain of headache, sore throat, fever, cough and runny nose. They are not at all characterized by loss of smell. Young and healthy people can easily mistake a Delta strain infection for a cold. But at the same time,

the patient can become worse in literally two to three or four days. For the course of moderate severity of the Delta virus disease, the following characteristics are common: severe joint pain, severe abdominal pain, nausea, vomiting, alarming temperature, fever, hearing loss, confusion, and gangrene. This is due to the fact that with the Brazilian strain, patients have an increased risk of blood clots in the blood vessels of the intestines, arms and legs.

Less threatening strains

The letters "η", "ι", "κ" and "λ" have been identified by WHO as less epidemiologically threatening strains of scientific interest:

- "η" ("eta") - Nigerian strain (B.1.525);
- "ι" ("iota") - American strain (B.1.526);
- "κ" ("kappa") - Indian strain (B.1.617);
- "λ" ("lambda") - is a Peruvian strain (C.37).

However, the lambda-virus is causing increasing concern in the global scientific community. Until now, Lambda has only been distributed in Latin American countries: Chile, Peru, Argentina and Ecuador. The other day, the first infected with such a mutation of the coronavirus were identified in the UK. The Lambda line has 8 key mutations. Molecular biologist Konstantin Semyonov, in an interview with «Moskovsky Komsomolets», suggested that it is the reason why the virus is resistant to antibodies received by humans after vaccination or after natural infection. According to Dr. Priyom Bose, a molecular biologist and biotechnologist at the Indian University of Madras, the lambda virus is also transmitted from person to person much faster. However, scientists believe that increased viral infectivity is not always an indication that the virus will spread rapidly and on a large scale. For example, the Epsilon variant was recognized by WHO as not dangerous. Since, against the background of its high capacity for infection, it could not spread in the human population.

THE ORIGIN AND HISTOLOGICAL SIGNIFICANCE OF PARKINSON'S DISEASE

Toporkov E. – the 2nd year student
Supervisors: Doc.Med.Sc. S.S. Tseluiko, S.V. Barannikov, O.I. Katina

Parkinson's disease (PD) is a chronic, steadily progressive disease of the brain accompanied by autonomic and mental disorders.

Parkinson's should be distinguished in: behavior disorder in the phase of active sleep; increased fatigue; muscle rigidity; disorders of metabolic processes and the autonomic nervous system; trembling of the head, limbs or the whole body; bradykinesia (slowing down of friendly and active movements).

Other cognitive disorders tend to involve many functions, including the following: disorders of reasoning and problem solving, short-sightedness; dysfunction of visual-spatial orientation.

The basal ganglia are a collection of nerve cells deep in the brain. They assist in: initiate and smooth out intentional (voluntary) muscle movements; suppress involuntary movements; coordinate changes in body position at Parkinson's disease; degeneration of neurons containing neuromelanin is shown, especially in the substantianigra and the blue spot of the brain. Surviving neurons often contain eosinophilic cytoplasmic inclusions - Levi's corpuscles.

COMPARATIVE ANALYSIS OF THE MORBIDITY OF COVID-19 IN THE TRANS-BAIKAL REGION IN 2020-2021

Kozko A., Koreneva T.- the 2nd year students
Supervisors: Cand.Biol.Sc., assoc.prof. L. A. Guba, O.I. Katina

Science is currently confronted with one of the most dangerous problems in the world. This is a coronavirus infection. Coronavirus infection (COVID-19) is an infectious disease caused by a newly discovered coronavirus. The number of sick people is growing every day. Most people infected with the viral pathogen COVID-19 experience mild or moderate respiratory symptoms and recover without the need for special treatment. The severe form of the disease often develops in the elder people and those having pathologies on a background, in particular cardiovascular or chronic respiratory diseases, cancer and diabetes.

Possible transmission mechanisms: airborne, droplet, fecal-oral, contact. The incidence increases in winter and early spring.

In this study we would like to show the danger of the virus using the example of the Trans-Baikal region.

The purpose of the research is to follow the statistics of the morbidity of coronavirus in the Trans-Baikal region in 2020-2021.

The method of our research is to study the literature on this topic.

We received valuable data on the number of sick, dead and recovered people and believe that the obtained summarized research results can be used for comparison in further research on coronavirus infection.

BACTERIOPHAGE PREPARATIONS PRODUCTION AND DETERMINATION OF SENSITIVITY TO THEM

Dragomeretskaya E.- the 3rd year student
Supervisors: Doc.Med.Sc. G.I. Chubenko, O.I. Katina

Bacteriophages are viruses of bacteria that are widely distributed in nature. They can be isolated from the open cavities of the human and animal body, reservoirs, sewage, soil, etc. To isolate the bacteriophage, the material under study (water, feces, pus, soil, etc.) is sown in a liquid nutrient medium, incubated in a thermostat and in a day the turbid liquid is passed through bacterial filters, asbestos plates, and ceramic candles. The resulting filtrate is examined for the presence of a bacteriophage by co-sowing with a suitable microbial culture on dense or liquid nutrient media. In 18-hour incubation, a continuous lawn of culture with transparent plaques — lysis zones grows on the surface of the agar. In the broth, the bacteriophage causes the enlightenment of the medium.

The material from the newly emerged sterile spot is seeded together with phage-sensitive microbes into a liquid nutrient medium. After 6-18 hours of incubation, the medium is filtered and a pure bacteriophage culture is obtained. For the production of the bacteriophage preparation, only approved strains and cultures of microbes with typical morphological, biochemical and serological properties are used. The industrial production of bacteriophage is currently carried out in special devices — reactors with a capacity of 250-1000 liters, with the use of aeration as a factor stimulating the development of microorganisms. The bacteriophage is added in an amount of no more than 0.3% relative to the volume of the nutrient medium. The medium with bacterial culture and phage is left at a temperature of 37 ° C for 6-18 hours. Phages actively multiply inside bacterial cells and cause their lysis that is externally manifested by the complete enlightenment of the environment. Quinosol (0.01%) or phenol (0.25%) is added to the resulting lysate as a preservative and, no later than two hours after that, the contents of the reactor are filtered through bacterial filters to remove the remaining

microbial cells. The resulting bacteriophage preparation should be a completely transparent yellow liquid.

To achieve the desired effect in the treatment with bacteriophage, it is necessary to determine the sensitivity of bacteria to bacteriophage preparations. Determination of sensitivity to bacteriophages is carried out by methods: Furth, Fischer (the method of phage tracks) or Otto.

Bacteriophages do not violate the normal human biocenosis and are prescribed in combination therapy with other drugs.

HISTOPHYSIOLOGY AND MECHANISM OF TASTE PERCEPTION

Shusharin N. – the 2nd year student
Supervisors: Doc.Biol.Sc., assoc.prof. I.Yu. Sayapina, O.I. Katina

The organ of taste is represented by taste buds (bulbs) located in the thickness of the epithelium of the foliaceous, fungiform and grooved tongue papillae. The taste bud has an oval shape. It consists of 40-60 cells tightly adjacent to each other, among which 5 types of cells are distinguished: sensoepithelial, "dark" supporting, basal poorly differentiated, peripheral.

1. Gustatory sensory epithelial cells are elongated fusiform cells; there are EPS of the agranular type in the cytoplasm, mitochondria. On the apical surface, these cells have microvilli with an electron-dense substance in the interstitial spaces. The electron-dense substance contains specific receptor proteins fixed at one end to the cytolemma of microvilli. Sensitive nerve fibers approach the lateral surface of taste sensory cells and form receptor nerve endings.

2. Supporting cells - curved fusiform cells that surround and support taste sensory cells. They differ in the presence of an oval nucleus with a large amount of heterochromatin located in the basal part of the cell.

3. Basal epithelial cells are poorly differentiated cells providing regeneration of the first 2 types of taste bud cells. The apical surfaces of the taste bud cells form a taste pit that opens onto the surface of the papilla epithelium by the taste pore.

4. Peripheral cells are sickle-shaped, contain few organelles.

Taste buds are specialized. So, the tip of the tongue is sensitive to sweet and salty, and its edges are sensitive to sour and bitter. But taste sensations are associated not only with chemical, but also with the physico-chemical properties of food. Temperature, surface structure, hardness or softness, liquid or solid state of food is important.

Saliva plays a significant role in the appearance of taste sensations: it helps to excite the taste buds and, as a solvent, washes away the remnants of taste substances from the surface of the tongue. Due to this, a person can consistently experience several taste sensations within 30-60 seconds.

The physiology of taste sensations is based on the mutual work of visual, olfactory, auditory and taste analyzers.

The biophysical mechanisms of information transformation in the taste analyzer receptors can be divided into stages:

1. Interaction of the stimulus with the receptor protein.
2. Change in membrane permeability.
3. Propagation of the receptor action potential.
4. Transcoding of the receptor potential into a nerve impulse transmitted to the central part of the taste analyzer.

DYNAMIC AND MINIMALLY INVASIVE SCOLIOSIS CORRECTION (ASC/VBT)

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Scoliosis is a disease of the musculoskeletal system characterizing with curvature of the spine in frontal (lateral) plane with the vertebrae turning around its axis and leading to malfunction of the thorax.

Types of scoliosis:

1) Thoracic scoliosis - curvature only in the thoracic part of the spine.
2) Lumbar scoliosis - curvature in the lumbar part of the spine.
3) Thoracolumbar scoliosis - one curvature in the area of thoracolumbar transition.

Causes of scoliosis:

1) Congenital anomalies in the development of the spine.
2) Neuromuscular - insufficiency and weakness of the musculocomposite apparatus of the spine.
3) Syndrome-associated - develope against the background of connective tissue dysplasia in Marfan syndrome, Ellers-Danlos syndrome.
4) Secondary - develope after fractures, surgeries, cicatricial contractures (restriction of joint movements), surgical interventions on the thorax.

Scoliosis occurs in 2-9% of children and adolescents up to 16 years of age. And the prevalence of this serious disease in school-age children reaches 15-30% or more.

There is a new alternative to strengthening the spine: the latest developed surgical technique that allows idiopathic treatment of scoliosis without loss of mobility. It was created in the USA, but the first operation in Russia was performed by Kolesov Sergey Vasilyevich - professor and the head of the Priorov Center of Spine Pathology. The implants used for dynamic scoliosis correction (ASC / VBT) tie the vertebrae together with a special harness (woven medical synthetic material). Dynamic scoliosis correction allows the child / teenager to maintain mobility and flexibility of the spine and back and promotes uniform growth of the torso, corresponding to their age. In addition, dynamic scoliosis correction avoids further deformities associated with growth of the child. Another advantage of dynamic scoliosis correction is that the surgery is reversible, since there is no hardening (fusion) of the vertebrae and the spine remains flexible. The best results of dynamic correction of scoliosis are achieved in children and adolescents aged 9-16 years with potential subsequent growth of 2-3 years and with scoliosis with angle of 65 degrees with still flexible spine.

Surgical results: within 3 months of VBT, 97% returned to school, 61% resumed physical education, 97% wore a backpack, 68% ran and 82% rode a bicycle; 70% bent within one month of VBT. 94% of patients returned to their preoperative athletic level. At 3 months, 63% of respondents had resumed non-contact, 61% contact, and 53% conflict sports.

Postoperative recovery is very fast, and discharge from the hospital is usually possible on the fourth day (if there are no complications). Generally, there is no need for an intensive care unit, because the incisions are very small, the scars are also small, there is little pain after the operation, and the recovery period is rapid.

THE DIET OF ATHLETES

Prokhorova A., Belik A. – the 3rd year students
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Diet is understood as the frequency of meals during the day, the observance of certain intervals between its individual meals and the distribution of the daily ration for individual meals. The urgency of the nutrition problem is associated with the fact that many nutritional disorders have an

adverse effect on the human body increasing the risk of developing major socially significant diseases. For example, at least 50% of cases of cardiovascular diseases are associated with malnutrition.

But the diet of athletes plays a special role, since a balanced diet for an athlete is an indispensable condition for good health, high efficiency and is essential for achieving planned sports results.

Often, proper nutrition for athletes contains much more restrictions than for ordinary people. But nutrition, in any case, should always be complete. Depending on the goals, only three indicators are regulated: the calorie content of the portion of food, the size of the portion of the food and the number of meals per day. Regardless of the sport that the athlete is engaged in, his age and other indicators, there are general rules for a balanced diet:

- it is necessary to follow the diet;
- the diet should be balanced in proteins, fats, carbohydrates, vitamins and minerals;
- the calorie content of food should correspond to the age characteristics of the athlete, the type of sport and the training period;
- the diet should be of high quality and complete, with the obligatory inclusion of vegetables, fruits, herbs;
- the menu should be designed so that it helps to reduce fat mass and build muscle;
- control over well-being and weight is important.

To draw up a correct diet, all individual physical characteristics, peculiarities of the sport, and the degree of stress must be taken into account. A good athlete's diet should be composed as follows: 30% protein, 60% carbohydrates, 10% fat. Trace elements in the body can come from any source in any form. More often, the distribution of calories is as follows: first breakfast - 5%, second breakfast - 30%, additional food after the first workout - 5%, lunch - 30%, afternoon meal - 5%, dinner - 25%. It is unacceptable to train and compete on an empty stomach, since long-term work leads to depletion of carbohydrate reserves and a decrease in efficiency to the extent that it is impossible to perform work. Morning breakfast should be taken 1.0-1.5 hours before training and 3 hours before competing. It is recommended to have lunch 2-3 hours before training and 3.5-4.0 hours before the competition.

The diet is a very important component both for an ordinary person and for athletes, as it increases the body's defenses and working capacity, and ensures the normal course of metabolic processes. And non-observance can lead to the development of many diseases.

LIMONENE AS A MULTICHARACTER WORKER IN THE SERVICE OF A PERSON

Komaldinov V. – the 2nd year student
Supervisors: N.A. Feoktistova, O.I. Katina

Influence of limonene on mental activity.

So since ancient times, people have noticed that some essential oils, citrus fruit juices, as well as coniferous tree resins have a beneficial effect on the general condition of the body: muscle tone increases, reaction accelerates, attention is better concentrated, the body seems to be filled with energy. The prevailing effect of this type was found to be achieved by the maximum content of limonene. Thus is a substance whose concentration in orange crusts can reach 97%. Thus, both d(+)- and d(-)- isomers have similar biological activity. The L-enantiomer predominates in the essential oils of the leaves of coniferous plants, turpentine synthesized by their various species and has, according to scientists, a similar positive effect. The racemic mixture of the substance, dipentene, is not devoid of such.

In the production of isoprene

The need to synthesize large volumes of isoprene on an industrial scale forced scientists to look for new types of raw materials. So, many minds were interested in obtaining isoprene from terpene hydrocarbons. And here dipenten showed a maximum product yield of 60-68% that was later brought to an unprecedented 80%.

In agriculture

The issues of increasing the output of agricultural products largely depend on the ability to protect the crop from both pests and mold damage during idle stocks and excess overproduction. At the same time, many pesticides and fungicides are not safe for humans and can cause harm. The researchers drew attention to the property of limonene to prevent excessive accumulation of chemicals in edible parts of plants and to reduce the harmful cumulative effect of some fungicides. Thus, limonene is used as an effective and important additive to remedies for spoilage of fruit and berry crops.

Since the last century, limonene has been regularly used for the synthesis of widely used drugs in medicine, such as terpinghydrate and menthol. But this is not the most key direction. Some studies confirm the anti-inflammatory and antioxidant properties of the substance, and the antitumor effect in the realities of today remains a truly unique phenomenon.

The wonderful properties of the substance do not end there. For example, such possibilities as appetite inhibition – hunger quenching, the ability to have an anti-stress and anti-anxiety effect, as well as a persistent gastro-protective effect due to stimulation of gastric mucus production have been confirmed.

Limonene also has the potential to reduce the risk of cardiovascular disease by reducing certain risk factors, such as elevated cholesterol, sugar and triglycerides in the blood.

It turns out that limonene is also able to act as a fighter against diabetes, obesity, thrombosis and atherosclerosis.

Thus, limonene is a rather promising remedy that can be used both as a dietary supplement and as a full-fledged medicinal product or raw materials for the production of such.

TO THE QUESTION OF THE PROFESSIONAL PRIORITIES OF A FIRST-YEAR STUDENT

Bobryshev S. – the 1st year student
Supervisors: Prof. E. N. Gordienko, O.I. Katina

Are professional priorities in medicine appropriate for a first-year student? There is no definite answer, but for some they are defined. The reasons are different: interest in high morbidity and mortality in the world, in Russia and the Amur region, and the lack of effective treatment for many cases; the presence of this nosology in their own genealogy and the desire to prevent its development; the desire to make a discovery and heal the suffering. One of such specialties in medicine is oncology. Oncology (from Greek. oncos - tumor, logos - word, science) - science that studies the causes, development of tumors, their clinical manifestations, diagnosis, treatment and prevention. In this regard, the question arises: where to start "immersion" in this industry? We choose two aspects: epidemiological and historical.

Every year more than 600 thousand people in Russia are known to get sick with malignant neoplasms (ZNO) and about 300 thousand people die. In connection with the problem of COVID-19 and the defeat of the respiratory system, it should be known that the leading causes of death include tumors of the trachea, bronchi and lung. Among the lesions of the upper respiratory tract, more than 60% of cases occur in the laryngeal pharynx, which in the structure of general morbidity are located

in the second ten of oncological pathology. Over the past 10 years, the incidence of laryngeal cancer in the Russian Federation (RF) has increased 3 times.

Considering the history of the development of oncology, we meet among many foreign names and great compatriots. The founder of experimental oncology is a veterinarian M. A. Novinsky, who in 1876 for the first time in the world carried out the grafting of malignant tumors from adult dogs to puppies. Today, oncology is closely linked by many modern branches, including cytogenetics, oncogenetics, ecogenetics, pharmacogenetics with Her Majesty Genetics in the hope that this community will answer all the problems about carcinogenesis, its treatment and prevention. But this can only be done together with solving global problems: ecology, energy, healthcare, and others that should guarantee the Health of Biota on Earth planet.

THE BIOLOGICAL ROLE OF LECTINS

Moskvitina A. – the 2nd year student
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Lectins are a common name for glycoproteins, as well as proteins of non-immune origin, capable of selectively and reversibly binding to carbohydrates. The highest content of these substances is found in food products of grain origin, legumes, and nightshade vegetables: tomatoes, potatoes, peppers, eggplants. The smallest amount of them is in dairy products and seafood. The first description of lectin was made by Peter Hermann Stilmark in 1888 at the University of Dorp. He isolated a toxic hemagglutinin from castor seeds, which was called ricin. More than half a century later, a second poison-abrin was isolated from peanuts. It causes rectal cancer.

Carbohydrate-protein compounds form the basis of many physiological processes occurring in the body. With their assistance, there is the adhesion of individual cells and microorganisms to tissues involved in the nonspecific immune response to various pathogens, as well as providing intercellular contacts through chemoreceptor identification by cells of each other.

Lectins are related to the appearance and development of malignant tumors. It is associated with changes on the surface of cells during their malignancy due to changes in cellular structures accompany the processes of malignant tumor growth. The changes can be tracked with the help of lectins as the tumor cell has the ability to self-identify with the help of carbohydrate-binding proteins. Lectins are necessary for the tumor cell for its transformation. They stimulate proliferation and mediate adhesion of transformed cells to normal tissues and tumor metastasis. And also lectin may influence the immune response of the body and thereby missing tumor cells out of immune supervision. They are related to the mechanism of action of mannose-binding lectin synthesized in the liver and involved in immune defense, binding to sugars on the surface of microorganisms. Thus the lectin pathway is triggered that promotes the removal of pathogens through complement-mediated phagocytosis.

MOLECULAR FEATURES OF CAPSID VIRUSES

Melisov B. – the 2nd year student
Supervisors: N.A. Feoktistova, O.I. Katina

Capsids of complex viruses, as a rule, consist of lipids and proteins.

Lipids can make up to 20-30% of a complex virion mass (mainly phospho- and glycolipids). They stabilize the viral particle, determine the conformation of supercapsid proteins, and also promote the penetration of the virus through the hydrophobic cell membrane.

Viruses have structural and non-structural proteins. Capsid and supercapsid proteins are distinguished among structural proteins. Capsid proteins are part of the capsomers. Tightly packed

nucleocapsid or NP proteins form a complex with nucleic acid. The capsid proteins themselves form a capsid, protecting the viral nucleic acid. In simple viruses, capsid proteins are also receptors.

Complex viruses also have supercapsid proteins. Often these are external glycoproteins, which include carbohydrates, form spikes on the surface of the supercapsid. They act as receptors - they recognize a sensitive cell and are adsorbed on it (address and attachment proteins).

Nonstructural proteins have been studied much worse. They are isolated from infected cells, difficulties arising in their identification and purification from cellular proteins. It was found that they play an important role in the reproduction of the virus.

THE PLAGUE. ETIOPATHOGENESIS, MORPHOLOGY AND DIAGNOSIS.

Sheven O. – the 3rd year student
Supervisors: Cand.Med.Sc., assoc.prof. N.V. Menshikova, O.I. Katina

Plague is an acute infectious disease from the group of quarantine diseases.

The plague bacillus is an aerobic and facultative anaerobe. It secretes fibrinolysin and hyaluronidase and persists in polymorphonuclear leukocytes and macrophages. Its antigens are close to the antigens of human tissues.

There are bubonic, septic and pulmonary forms of plague.

1) Bubonic form is the most common form of plague that develops as a result of the bite of an infected flea. Plague bacilli penetrate through the skin at the site of the bite into the lymphatic system and enter the nearest lymph node. The lymph node becomes inflamed due to multiplication of plague bacteria Yersinia pestis, or Y. pestis, in huge quantities. A swollen lymph node, called a "bubon", causes a lot of pain and can be decaying like an open wound at a late stage of the disease.

2) The septic form of plague develops in the case of infection spreading directly through the blood without the formation of "bubons". In most cases, in the late stages of bubonic plague, Y. pestis bacteria enter the blood. Septic plague can develop as a result of flea bites and from direct contact with infectious materials through fissures in the skin.

3) The pulmonary form is the most dangerous and least common form of plague. Usually, the pulmonary form develops as a result of the secondary spread of infection of the primary bubonic form of the disease in the late stages. Primary pneumonic plague develops as a result of inhalation of aerosol droplets containing pathogens of the disease, and can be transmitted from person to person without the participation of animals and fleas. Without treatment, the mortality rate of pneumonic plague is extremely high. Complications: meningitis - inflammation of the membranes of the brain and spinal cord; gangrene (blood clots in the blood vessels of the fingers, formed during the plague, can disrupt blood flow to them and lead to the atrophy of limbs); DIC-syndrome - leads to bleeding, the formation of blood clots in organs and, as a consequence, to multiple organ failure and death).

THE NECK PHLEGMON TREATMENT

Prokhorova A. – the 3rd year student
Supervisors: D.A. Kudryavtseva, O.I. Katina

Phlegmon of the neck (Dupuytren's phlegmon) is a purulent-inflammatory disease characterized by the involvement of the deep cellular spaces of the neck and mediastinal organs in the pathological process. It is manifested with a rapidly increasing consolidation, a local increase in temperature, redness of the skin, symptoms of general intoxication. Pains significantly limit the mobility of the head, the process of swallowing and breathing. Phlegmon of the neck pose a significant danger to the patient's life by the spread of the process along the interfascial spaces into the mediastinum and the generalization of the infection. In most cases, phlegmon

are caused by long-term foci of bacterial infection (odontogenic, tonsillogenic infection) as well as the presence of foreign bodies in the laryngopharynx and complications of surgical interventions. The penetration of pyogenic bacteria into the neck tissue causes the development of an inflammatory process that spreads in breadth and depth within a short time.

Effective cure of a patient is possible only with his timely referral for specialized medical care. Medical tactics for phlegmon involves an emergency surgical intervention, the administration of antibacterial and anti-inflammatory drugs, and detoxification therapy. 1. Conservative treatment. The therapy is carried out mainly in the postoperative period in order to accelerate the cleansing and healing of wounds. The administration of infusion therapy, enteral and parenteral administration of drugs is advisable in the following cases:

- correction of hypovolemic disorders. The serious condition of the patient and low blood pressure require infusion at the stage of preparation for opening the phlegmon to reduce the risk of intra- and postoperative complications.

- postoperative drug therapy. In the hospital the broad-spectrum antibiotics are prescribed. According to indications, anti-inflammatory, analgesic and other medicines are used. 2. Surgical treatment. The only way to stop the spread of infection in the tissues is to insure optimal conditions for the outflow of pus by wide opening of the phlegmon. It includes the following mandatory steps:

- opening of the affected area. A surgeon makes a significant incision in the projection of the lesion, widely discloses the fascial space of the neck.

- the wound clearance. The pus is evacuated. The wound is bathed abundantly with antiseptic solutions during the operation, and then repeatedly during the dressing process until it is completely cleansed. The wound is not sutured to facilitate drainage and the possibility of subsequent staged necrectomy.

- drainage. Drains are placed in incisions in the neck and in the mediastinal area if there are signs of mediastinitis. The locations of the drainage tubes are determined by the areas of the chest covered by the inflammatory process. The drainage tubes are connected to containers in which exudate is collected.

3. Experimental treatment. The patient's condition during the formation of phlegmon of the neck is largely determined by the high concentration of decay products of necrotic tissues and the vital activity of bacteria. Toxins are removed through the blood and lymph, the ratio of the contribution of both detoxification pathways is 1: 6. In this regard, methods for correcting the functions of the lymphatic system by indirect endolymphatic infusion of drugs are being developed and applied.

The number of patients with purulent-inflammatory diseases of the neck in dental hospitals and departments of maxillofacial surgery gets one third of the total number of patients. Therefore, it is so important to have this knowledge.

FIGURNOV VALENTIN ALEXANDROVICH. THE GREAT SCIENTIST AND INVENTOR

Kipaykina A., Motalygina A. – the 5th year students
Supervisors: E.V. Figurnova, O.I. Katina

Figurnov Valentin Aleksandrovich was born in 1939 in the city of Khabarovsk in the family of a military man. In 1962 he graduated from the Khabarovsk State Medical Institute, and began his career as a general practitioner in the district hospital of Troitskoe village, Nanaysky District, Khabarovsk Krai.

From September 1967 to February 2020 he worked at the Amur State Medical Academy at the Department of Infectious Diseases with Epidemiology and Dermatovenereology. From 1982 to 2012 he headed the department.

He has been engaged in scientific research since 1957, from the second year of the medical institute. In 1981 he defended his doctoral dissertation on the topic: "Hemorrhagic fever with renal syndrome in the area of the upper Amur region". The main area of scientific research is "Natural focal viral and parasitic diseases of the upper Amur region". The professor has developed the device for a transfer of laboratory equipment used for examining patients in rural areas. Also he suggested a system for evacuating patients by various vehicles from rural areas to the regional center. After studying and publishing in the journal of Surgery named after I. Grekov (No. 4, 2018) articles on the development of phlegmon in the forearm of the right hand as a consequence of the development of dirofilaria in the tissues of the hand, Professor V.A. got a proposal from the American medical community to be a shift editor for the next issues of foreign medical journals.

Simultaneously with infectious diseases, he worked out drugs to combat cancer. Obsessed with the idea of creating drugs, the professor conducted experiments on himself. In the scientific arsenal of Figurnov V.A. there are more than 50 inventions on human and animal blood clots, that he protected by Russian patents. Based on the results of completed patents on a blood clot, grants were received: - in December 2011 at the "Kulibin readings" in Moscow, and in May 2012 at the conference "Umnik" in Khabarovsk.

His name is included in the "Famous Scientists" encyclopedia. Figurnov V.A. is the Honored Doctor of the Russian Federation, Honorary Worker of Higher Professional Education in Russia, Doctor of Medical Sciences, and excellent public health worker of the USSR, member of the Russian Association of Infectious Diseases Physicians and the International Association of Infectious Diseases and Epidemiologists, Honorary Professor of the ASMA. He is the author of 300 scientific papers. The results of scientific research are published in Web of Science and Scopus. Figurnov V.A. was awarded with a silver medal named after A.S. Popov for his contribution to invention.

Valentin Aleksandrovich's interests were not limited to medicine. Few people know that he also wrote wonderful poems and published a collection of poetry "Do not fade my candle".

AMOBORBITAL

Toporkov E. – the 2nd year student
Supervisors: prof., Doc. Med. Sc. E.A. Borodin, O.I. Katina

A soporific remedy derived from barbituric acid. It suppresses the sensory zone of the cerebral cortex, reduces motor activity, changes the functional activity of the brain state. Although the mechanism of action has not been definitively established, barbiturates appear to be particularly active at the level of the hypothalamus, where they suppress ascending conduction in the reticular formation, thereby preventing the transmission of impulses to the cerebral cortex. As other barbiturates, it has an anticonvulsant effect in narcotic doses. It may cause respiratory depression. The degree of respiratory depression depends on the dose. Barbiturates promote the induction of microsomal liver enzymes, thereby enhancing or altering the metabolism of other drugs.

Ketamine

It is a remedy for non-inhalation anesthesia. Ketamine causes dissociative anesthesia - a condition in which some parts of the brain are excited and others are depressed. It explains the manifestation of analgesic effect with incomplete depression of consciousness and preservation of spontaneous breathing, pharyngeal, laryngeal and cough reflexes (the dose of ketamine that causes apnea is 8 times higher than hypnotic). The surgical stage of general anesthesia does not develop when

using ketamine (the visceral analgesic activity of ketamine is insufficient, which should be taken into account during abdominal operations).

It causes a specific set of symptoms: somatic analgesia, a condition resembling neuroleptanalgesia, increases blood pressure, myocardial contractility, minute blood volume and myocardial oxygen demand, relaxes the smooth muscles of the bronchi. It practically does not reduce the tone of skeletal muscles and can cause involuntary muscle twitching.

In adults, the minimum dose that causes a hypnotic effect with a single intravenous injection is 0.5 mg / kg of body weight (depression of consciousness lasts 1.5 minutes). At a dose of 1 mg / kg, it depresses consciousness for 6 minutes, at a dose of 1.5 mg / kg - for 9 minutes, at a dose of 2 mg / kg - for 10-15 minutes. With an intramuscular injection of 4-8 mg / kg, the effect occurs after 2-4 minutes (6-8 minutes) and lasts an average of 12-25 minutes (up to 30-40 minutes). In children with intramuscular administration, general anesthesia occurs after 2-6 minutes, with intravenous administration - after 15-60 seconds, the duration of action is 15-30 minutes and 5-15 minutes, respectively.

The analgesic effect of ketamine in somatic pain is manifested when prescribing sub-narcotic doses. The maximal analgesic effect occurs 10 minutes after intravenous administration and persists for 2-3 hours, with intramuscular administration, the effect is longer.

Benzylmorphine

Benzylmorphine (Peronin) is a semi-synthetic opioid drug. It entered the international market in 1896 and soon thereafter in the United States market. It is very similar to codeine, containing a benzyl group attached to a morphine molecule. Just as the methyl group creates codeine, and the ethyl group creates ethylmorphine or dionine (used as a common name for this drug, as peronin for benzylmorphine). By weight, it is about 90% heavier than codeine.

CATARACT

Melisov B. – the 2nd year student
Supervisors: Cand.Biol.Sc. T.L. Ogorodnikova, O.I. Katina

Cataract is a pathological condition associated with clouding of the lens of the eye and causing various degrees of visual impairment up to its complete loss. Lenticular opacity is caused by the protein denaturation being a part of it.

Histologically, the lens is divided into:

- Capsule;
- Capsular epithelium;
- Lens substance.

Most often, opacity of the eye lens occurs due to following reasons:

- age-related changes;
- heredity;
- injuries, inflammatory and dystrophic diseases of the eye;
- general somatic diseases and etc.

Pathogenesis of cataracts. It is known that there are a huge number of reasons that can cause cataracts. However, the activation of the lipid peroxidation process is recognized as the main mechanism of membrane structures damage - a violation of the balance between oxidation effectors and oxidation protectors. There are no proper vessels in the lens. It gets all the necessary nutrients from the watery moisture of the anterior and posterior chambers of the eye.

A change in the biochemical composition of the fluid of the anterior chamber leads to a failure of protein metabolism in the tissues of the eye lens. The lack of necessary elements or the penetration

of harmful metabolites results in the lost of natural properties by proteins of the lens. Their denaturation occurs and, as a result, the opacification of the biological lens.

Cataract treatment: To date, the only correct method of cataract treatment is surgical one, as there is no any invented measure that allows to restore transparency to the opacity lens without surgery.

SPECIFIC PREVENTION OF PARENTERAL VIRAL HEPATITIS B IN CHILDREN

Privalova U. – the 5th year student
Supervisors: Cand.Med.Sc. A.V. Zotova, O.I. Katina

Hepatitis B is a viral infectious disease affecting the liver and occurring in an acute or chronic form. Morphologically it is manifested by inflammatory, necrotic and fibrotic changes in liver tissue of varying severity. Transmission of the virus occurs most often in perinatal form from mother to a child, as well as through contact with blood or other biological fluids, in particular during sexual contact with an infected partner, unsafe practice of making injections, cuts with a piercing and cutting tool in medical practice and in everyday conditions, as well as among people using injecting drugs.

Hepatitis B virus is a DNA-containing virus, the genus Orthohepadnavirus of the family Hepadnaviridae. It has a high contagiousness and resistance to environmental factors. The virus has a complex structure, including double-stranded DNA (Dein particle) and 4 antigens – superficial (HBcAg), heart-shaped (HBcAg antibodies), infectivity antigen (HBeAg) and HbcAg.

The incidence of acute parenteral viral hepatitis B in the Russian Federation has been steadily decreasing in recent years. The implementation of a set of preventive measures and, first of all, a large-scale vaccination program, when more than 80 million people were vaccinated against hepatitis B, allowed to reduce the incidence of acute hepatitis B in the period from 2000 to 2012 by 30 times and reach the indicator of 0.88 per 100 thousand population by the beginning of 2019. The wide coverage of preventive vaccinations of children under 14 years of age led to a 90-fold decrease in the incidence rate in this group over the specified period: from 9.96 to 0.11 per 100 thousand children under 14 years of age.

To date, in children, regardless of age, the incidence rate tends to the minimum values. In the Amur Region, since 2010, there has been a 6-fold decrease in hepatitis B among the adult population. Cases of acute viral hepatitis in children have not been registered for 10 years.

Specific prevention is vaccination against viral hepatitis B within the framework of the national calendar of preventive vaccinations for all citizens in order to prevent the development of the disease. Standard hepatitis B vaccination schedule: 0-1-6 months. Children from the risk group (the mother is ill or is a carrier of hepatitis B, the mother was not examined during pregnancy, there is a hepatitis patient in the family, a child from a dysfunctional family) according to the scheme: 0-1-2-12 months. Preparations for vaccination: domestic preparations of Regevac and Combiotech B, Infanrix-hexa (Glaxo, Belgium).

It is administered intramuscularly. The optimal place for intravenous injection for children 0-3 years old is the anterior-outer thigh area (the lateral part of the quadriceps muscle), and for children older than 3 years and adults – the deltoid muscle (the area below the acromial process and above the armpit). The needle is inserted at anangle of 90 degrees.

INCIDENCE OF ACUTE PARENTERAL VIRAL HEPATITIS IN THE AMUR REGION

Motalygina A., Kipaykina A. –the 5th year students
Supervisors: Cand.Med.Sc. A.V. Zotova, O.I. Katina

Viral hepatitis remains to be a serious medical and economic problem of global health.

In the Amur Region, the epidemiological situation with respect to the incidence of parenteral viral hepatitis is assessed as favorable.

Analysing the sex and age structures of acute parenteral hepatitis morbidity it was revealed that women accounted for 51.6% and men 48.3%. By age structure the highest morbidity in women (62.5%) was found in the age group 20-39 years old, in men 53.3% in the age group 30-39 years old and older.

According to the epidemiological anamnesis, in 25.8% of cases patients associated the disease with non-medically invasive interventions, in 16.2% of cases with receiving dental care, in 13% were hemotransfusions, 10% noted surgical interventions and in 19.3% of cases patients denied various interventions.

Thus, for the period 2017-2019 there was a trend towards stabilization of the epidemic process in acute viral hepatitis with the parenteral mechanism of infection.

CNS DAMAGE IN HIV-INFECTED CHILDREN

Pnivchuk A., Pnivchuk A. - the 5th year students
Supervisors: Cand.Med.Sc. A.V. Zotova, O.I. Katina

Human immunodeficiency virus belongs to neurotropic viruses. Involvement of brain tissue occurs soon after infection. In vitro HIV infection leads to activation of the cerebral vascular endothelium increasing the risk of viral cells and particles entering the central nervous system. HIV-induced expression on the endothelial cells of the cranial microvessels increases the marginal accumulation of leukocytes in the vascular bed of the brain. It leads to the emergence of a larger number of HIV infection targets within the central nervous system.

HIV in the CNS contributes to an inflammatory process that eventually leads to the cell death and neuronal prolapse through apoptosis. There are marked inflammatory changes and calcification of small or medium vessels, especially in the deep structures of the brain. This explains the occurrence of ischemic heart attacks and strokes in children with HIV infection.

Clinical symptoms of CNS damage: HIV-associated encephalopathy, characterized by developmental delay, muscle hypertension, microcephaly, and calcification of the basal ganglia are observed in 80% of sick children.

TOUCHING THE PROBLEM - WITH THE HOPE OF DEFEATING THE VIRUS

Martynov S. – the 1st year student
Supervisors: prof. E. N. Gordienko, O.I. Katina

Entering medical school coincided with a very difficult period in human history - the COVID-19 pandemic. Studying fundamental disciplines and working with scientific information helped to form an understanding of this dangerous "infectious weapon". Coronaviral infection (COVID-19) is an acute viral disease affecting all vital organs. Among many aspects and problems of its study there are several ones:

- Epidemiology: SARS-CoV-2 has a huge negative impact on the population of the whole world, Russia, the Amur region and our neighbor China. The number of infected is 9.145.912 + 36.818, where the sign “+” shows the progression of the disease per day.

- Way of infection: The coronavirus is sprayed by an infected person with saliva containing the pathogen. The minimum spraying distance is 2 meters, the aerosol settles on nearby objects within one hour. Survival of the virus remains to be a problem: retention time of COVID-19 on surfaces is up to 9 days. It depends on the object, e.g. on clothing it keeps up to 12 hours and 6-9 days on plastic.

- Contagiousness of the pathogen: An international team of scientists has discovered that SARS-CoV-2 infects cells in the mouth with the key protein – angiotensin - converting enzyme 2 (ACE 2). That allows the virus to penetrate cells in the body, especially the epithelium of the salivary glands of the mouth. It is here that ideal conditions are created for the expression of RNA even in a small proportion of the cells of the oral epithelium, the gums. Thus the oral cavity seems to be particularly vulnerable to the virus. Hence the frightening figures on the spread of infection occur.

- Prevention: SARS-CoV-2 is an enveloped virus. Its lipid bilayer is quite sensitive to drying out, high temperature and disinfectants, making such viruses easier to sterilize. And this defines the necessity of all preventive measures.

- Epidemiological features: The virus has no seasonality like influenza, but there are waves of virulence activation and mutation resulting in new strains! Outbreaks are associated with its high contagiousness, also due to population migration.

Touching the problem plays a major role in education for the future doctor, orienting him towards a serious study of the relationship of the human organism and populations with infections and invasions - parasitism.

TRANSPLANTATION OF A SKIN FLAP ON A VASCULAR PEDUNCLE

Belimova P. – the 3rd year student
Supervisors: D.A. Kudryavtseva, O.I. Katina

A skin flap is an area of skin and subcutaneous tissue that has been transferred to another place, but retains contact with the body through its base or vascular peduncle and receives sufficient blood supply from them. Transplantation of a skin flap on a vascular peduncle is the most effective method of treating protracted non-healing trophic ulcers, deep bedsores, and tissue defects after gangrene with bone exposure.

The first transplant for elimination of a defect in the soft tissues of the head using a skin flap on a vascular peduncle was carried out in 1863 by M.T. Dunechan. In 1918, J.F.S., Esser improved this operation and called it an "artery flap", i.e. a flap with axial circulation. The method is based on taking a skin flap from a certain place of the body with vessels that supply it with blood, followed by connecting these vessels with an artery and vein near the skin defect, so that the flap covers this defect. This operation is performed under a microscope using microsurgical vascular connection technique. The success of the operation depends on many factors. First, it is necessary to make conditions for tissue flap transplantation. The wound that is supposed to be closed should be clean, granulating, with a good blood supply. So, the first step is to restore blood circulation in the limb and defeat the infection. It is also necessary to examine the flap and its vascular peduncle. For this reason the ultrasound of the flap vessels and the outlet of these vessels from major highways are performed. Since the flap is not innervated, it cannot recover full sensitivity. That’s why a patient needs to remember this and try to avoid injuries to the transplanted flap.

In order to enhance the regenerative abilities of the body, anabolic steroids can be prescribed. During the healing period the transplanted skin is fully adapted, donor cells are completely replaced with new ones, and connective tissue proteins are synthesized. The process takes place in 3 months.

ATOPIC DERMATITIS IN CHILDREN

Kim A. - the 5th year student
Supervisors: Cand.Med.Sc., assoc. prof. N. E. Melnichenko, O.I. Katina

Atopic dermatitis in children is a chronic recurrent inflammatory skin disease of increasing sensitivity to food and contact allergens. Atopic dermatitis is the earliest and most frequent

manifestation of the body's hypersensitivity reaction to environmental allergens. It accounts for 80-85% of allergy cases in young children. The prevalence of atopic dermatitis in a child population is steadily growing. It is 10-15% in the age group under 5 years old and 15-20% among school-aged children. The risk of developing atopic dermatitis in children is proved to be 75-80% in case of hypersensitivity in both parents and 40-50% in the presence of atopy in one of the parents.

Erythematosquamous and lichenoid skin lesions are characteristic for the childhood form of atopic dermatitis. Hyperemia, severe dryness of the skin with a large number of pityriasis scales, increased skin pattern, hyperkeratosis, profuse desquamation, painful cracks, persistent itching aggravating at night are noted in children. Skin changes are located mainly on the flexor surfaces of the limbs.

LEISHMANIOSIS IN THE CLINICAL PRACTICE OF A DERMATOVENEROLOGIST

Pnivchuk A., Pnivchuk A.– the 5th year students
Supervisors: Cand. Med. Sc., assoc. prof. N.E. Melnichenko, O.I. Katina

Leishmaniosis is a group of protozoal diseases in humans and animals characterized by damage to the skin, mucous membranes and internal organs. The causative agent penetrates into the thickness of the skin when bitten by a mosquit forming a leishmaniasis granuloma in the area of the entering atrium. In 2 weeks, a necrotic focus is formed in leishmanioma. It is ulceration with undermined edges surrounded by a torus of infiltrated skin, with abundant discharge of a serous-purulent or hemorrhagic nature. Secondary "tubercles of seeding" develop around the primary leishmanioma. Later, new ulcers form from them merging into a single ulcerated field.

Patient G. came to the ARDVD with complaints of rashes on the skin of the trunk, limbs and face accompanied by soreness, burning, weeping. From the anamnesis: she was in Israel, did not notice insect bite, associates skin rashes with herpes. The initial diagnosis was leishmaniosis. It was verified by the laboratory of CBIH “ARDVD”. Treatment issues were discussed collectively at the medical commission of the CBIH “ARDVD”. Positive dynamics was noted against the background of the received therapy.

The given case is of interest to dermatovenerologists, infectious disease specialists, and therapists due to the rare occurrence of the disease in Russia.

EYEBALL STRUCTURE ANOMALIES

Mureeva V. – the 2-nd year student
Supervisors: Cand. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

Anomalies in the structure of the eyeball are defects of the organ of vision that are congenital and hereditary in nature or that have arisen in the process of intrauterine development, leading to the abnormal development of individual structures and the eyeball as a whole. A change in the size of the eyeball up to its complete absence, underdevelopment of the cornea, iris, vitreous body, lens and other parts of the eye are the characteristic features. Examples of such anomalies are: anophthalmos, microphthalmos, cyclopia, aniridia, retinoblastoma, congenital astigmatism, aphakia, myopia, strabismus, cataract, glaucoma.

Pathologies are accompanied by a decrease in vision, often combined with other defects. They are diagnosed on the basis of clinical signs, ophthalmoscopy and eye biomicroscopy. Treatment of eye abnormalities is aimed at correcting vision and possible preserving the affected parts of the eye. Gross defects are difficult to correct. In most cases, disability is inevitable. In addition, abnormalities in the development of the eye are rarely found in isolation, which also has a negative impact on the prognosis. Prevention consists in excluding the effects of teratogenic factors in early pregnancy.

Pregnancy planning and genetic consultation are necessary in case of hereditary diseases in parents and other relatives.

STUDYING THE DYNAMICS OF DISEASES OF THE RESPIRATORY ORGANS IN THE INHABITANTS OF THE AMUR REGION

Mureeva V. – the 2-nd year student
Supervisors: Cand. Tech. Sc. Y.I. Derzhapolskaya, E.A. Volosenkova

Diseases of the respiratory system still represent an important social and medical problem throughout the world, since they occupy one of the leading places in the total mortality rate of the population, and the economic damage to society due to the high morbidity and disability of patients is enormous.

The most common inflammatory diseases of the respiratory system in medical practice are acute inflammation of the upper respiratory tract, inflammation of the bronchi - bronchitis, bronchial asthma, lung inflammation - pneumonia and tuberculosis.

One of the most important indicators of health status is the incidence rate of the population. In order to predict the incidence of respiratory diseases in the population of the Amur Region, an analysis was carried out over the past five years from 2015 to 2020. According to the official statistics of the Amur Statistical Yearbook, respiratory organs account for about 45% of all cases of morbidity. Stably high rates of prevalence and morbidity of respiratory diseases among the adult population of the Amur Region, which do not exceed the national ones, but are characterized by an annual growth rate, have been noted. Respiratory diseases among the adult population in the Amur region in 2015–2020 amounted to 37478.58 per 100 thousand of the adult population, respectively. If in 2015 the prevalence of bronchopulmonary pathology was 35761.9 per 100 thousand of the adult population, then in 2020 - 38133.2 (an increase of 6.6%).

Thus, this analysis reflects and predicts an increase in the incidence of respiratory diseases in the Amur Region every year.

APPLICATION OF VITAMINS IN SPORT

Mureeva V. – the 2-nd year student
Supervisors: N.A. Feoktistova, E.A. Volosenkova

All the most important life processes in our body take place with the participation of vitamins and minerals. Moreover, the body itself is not capable of producing most of the vitamins on its own, so we must get vitamins and minerals every day from the food we eat or from food supplements.

Vitamins and coenzymes represent the most important group of metabolic pharmacological drugs used in sports medicine, the lack of which can lead not only to a lack of sports progress, but also to a deterioration in overall health. They are responsible not only for the vitality of the body, but also ensure its normal development, participate in various physiological processes and biochemical reactions associated with the formation of energy, changes in metabolism, synthesis of substances, oxygen transport, acceleration of recovery processes after training, cell growth, muscle contractions, affect the effectiveness of training.

Vitamins do not directly increase physical performance, but their deficiency can significantly disrupt the course of biochemical reactions and physiological processes in the body, especially under conditions of intense training and competitive loads. The body will lack resources for recovery, which will lead to a weakening of the immune system and a deterioration in well-being. Also, food cannot be fully assimilated. Without a sufficient amount of vitamins, the formation of proteins from amino acids is not possible, as a result of which muscles will not recover and grow.

Vitamins participate in the metabolism of the body in two ways: they are part of the coenzyme or prosthetic groups of enzymes, or they are directly involved in the course of certain chemical reactions.

CONGENITAL MALFORMATIONS

Mureeva V. – the 2-nd year student
Supervisors: Assoc. Prof. T.L. Ogorodnikova, E.A. Volosenkova

Congenital malformations occupy one of the first places in the structure of child morbidity, disability and early child mortality. The term "congenital malformation" is understood as persistent morphological changes in an organ or the whole organism which occur in utero, go beyond their possible structure and lead to functional disorders. Depending on the timing of the onset of intrauterine pathology, the following forms are distinguished: gametopathy, blastopathy, embryopathy, fetopathy.

Gametopathies are damages of the male or female gamete which occur during ovo- and spermatogenesis prior to fertilization. Severe damage to gametes can lead to their death, the development of infertility and spontaneous abortions.

Blastopathy is a pathology limited to the first 15 days after fertilization. The main end-results of blastopathies include empty embryonic sacs, hypoplasia and aplasia of extraembryonic organs, twin malformations, ectopic pregnancy. The developmental pathology of the entire embryo is a general disorder, in most cases incompatible with life.

Embryopathies are all types of embryonic pathology (from 16 to 75 days of pregnancy), induced by exposure to damaging factors. Embryopathies are characterized by abnormalities in organ formation.

Fetopathy is a consequence of damage to the fetus from the 9th week to the moment of birth. There are early (up to 28 weeks of gestation) and late (from 28 weeks to delivery) fetopathies.

Malformations often occur at certain periods, which are called critical, under the influence of teratogenic factors. Teratogenic factors can be physical, chemical or biological and include drugs, viruses, radiation, drugs, and many other substances. Prevention of congenital malformations provides for individual and public events. To prevent congenital defects, parents-to-be should lead a correct lifestyle and give up bad habits.

THE SKIN STRUCTURE OF DIFFERENT REPRESENTATIVES OF AFRICAN - AMERICAN, SLAVIC AND ASIAN RACES

Krasnenkova K. – the 1-st year student
Supervisors: Cand. Med. Sc., Assoc. Prof., S.S. Seliverstov, E.A. Volosenkova

People are all representatives of Homo sapiens, with an identical number of chromosomes, but there is one of the main features that divides us into races - skin! The key difference between ethnic groups is skin color, which is determined by the ratio of three pigments: eumelanin (pheomelanin), carotene, hemoglobin (and oxyhemoglobin) of the blood. The main pigment on which the color of the skin, eyes and hair depends is melanin. Another difference is skin photosensitivity in different ethnic groups. So, with equal exposure to ultraviolet radiation, some will have a tan, others - a burn. Photosensitivity also plays a role in the occurrence of various photoaging and oncological processes on the skin.

GENOMICS OF PSORIASIS

Krasnenkova K. – the 1-st year student
Supervisors: Doc. Med. Sc., Prof. E.N. Gordienko, E.A. Volosenkova

Psoriasis (synonym - scaly lichen) has been known for a long time and is one of the most common chronic dermatoses, accounting for 14.6 to 24% of all skin diseases. Psoriasis is said to be one of the "curses of the human race."

At different times, various theories of the origin of psoriasis have been proposed: parasitic, infectious (including viral), allergic, infectious-allergic, autoimmune, neurogenic, endocrine, metabolic, and hereditary. However, none of these theories can explain all cases of psoriasis.

Psoriasis is a chronic inflammatory immune-dependent gene dermatosis - an example of a nosology of multifactorial genesis, transmitted by a dominant type with incomplete penetrance. Multifactorial genesis or polygenic type of interaction of a large group of established genes responsible for the immune response and the regulation of the synthesis of adapter proteins and antiviral signaling, genes of histocompatibility, makes it possible to assess the selective role of environmental factors that trigger their activity.

LIPOLYTIC DRUGS AND THEIR EFFECT

Shirkunov V., Vlasova A. – the 2-nd year students
Supervisors: Prof. E.A. Borodin, E.A. Volosenkova

Mesotherapy is the treatment of certain pathological phenomena by affecting the connective tissue. This event corrects a lot of aesthetic human problems: acne; hyperpigmentation; local fat deposits; cellulite; skin rehabilitation.

Lipolytics are a group of injectable drugs used in cosmetology to eliminate cellulite and local fat deposits in the area of the "second" chin and body by activating or enhancing lipolysis. These drugs are usually divided into direct and indirect lipolytics.

Straight lipolytics are the most powerful substances that consist of two active substances.

Indirect lipolytics - a gentle substance, the composition of which is based on plant components.

Today lipolytics are very common drugs in cosmetology because of their ease of use, relative simplicity, painlessness and, of course, a quick and good result.

The main active substances involved in the composition of lipolytics are:

phosphatidylcholine solution (0.6 %),
sodium deoxycholate solution (0.6 %),
L-carnitine,
Medicinal Dandelion extract (2.0%),
Guarana extract (400 mg).

The action mechanism of direct, indirect lipolytics is different, but very similar. When using indirect lipolytics, phosphodiesterase is inactivated without destroying the adipocyte, when using direct lipolytics, inflammation is formed, which leads to the destruction of the membrane of fat cells - their destruction and excretion of the stored substance, then fat oxidation occurs.

HISTORY OF THE AMUR MEDICAL ACADEMY

Shirkunov V., Vlasova A. – the 2-nd year students
Supervisors: T.N. Skabelkina, E.A. Volosenkova

The Amur State Academy was founded on August 1, 1952. The training of students of the Amur State Medical Academy is carried out at the medical and pediatric faculties. Educational

activities at the Faculty of Medicine are provided by 161 full-time teachers and 27 external part-time workers, of whom 44 are Doctors of sciences, 113 -Candidates.
Professors, associate professors, candidates of medical sciences, honored teachers train doctors in internship in 17 specialties, for advanced training and the professional retraining of specialists - in 49 specialties.

THE EFFECT OF THE LASER "AESTHETICS 3.0" ON THE PIGMENT CELLS OF THE SKIN

Shirkunov V., Vlasova A. – the 2-nd year students
Supervisors: Prof. N.P. Krasavina, E.A. Volosenkova

Light is one of the methods of treatment of aesthetic skin defects in cosmetology. For the efficient operation of light, a special installation called a laser or an acronym is used.

The principle of laser operation is that light acts only if the object is able to absorb light. Such objects are called chromophores, in the human body they are represented in the form of: melanin, hemoglobin, collagen, water. Melanin is a high-molecular pigment that has an irregular structure and complex chemical composition. When the melanin cell is exposed to light, it heats up with subsequent destruction.

The use of modern hardware methods makes it possible to solve a large number of aesthetic skin defects, thereby making patients in this area really healthy and beautiful.

VARIANTS OF ATYPICAL STRUCTURES OF THE AORTIC ARCHES AND THEIR SURGICAL SIGNIFICANCE

Shirkunov V. – the 2-nd year student
Supervisors: Cand. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

The aorta is the largest artery of the body, originating from the left ventricle of the heart.

Classification of atypical structures of the aortic arch is given.

The report also includes the following information:
the forms of variability of branch separation from the aortic arch;
normal aortic structure, the difference between common atypical variants;
a detailed description of the differences and the course of the arteries of atypical variants of the aortic arch in comparison with the norm.

In conclusion, theoretical and practical significance of knowledge of atypical variants of the aortic arch in surgery is shown.

SIGNS OF PROFESSIONAL BURNOUT OF A MEDICAL WORKER, BASIC METHODS OF PREVENTION

Morokova O. – the 2-nd year student
Supervisors: Cand. Med. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

Recently, due to the current situation in the world, there is a great burden on all medical personnel. As a result, more and more doctors face the syndrome of professional burnout (PV), characterized by emotional exhaustion, depersonalization and a decrease in personal achievements, which has been demonstrated in many foreign studies.

Scientists from the Siberian State Medical University interviewed more than 4 thousand of medical workers in the Tomsk region, and came to the conclusion that 99% of doctors had professional burnout, and every third had an extremely high degree. As it was stated in the study, "an assessment of the professional burnout of medical workers in the Russian Federation" was carried out "on the

model of the Tomsk region". That is, scientists believe that the results obtained are typical for doctors throughout the country.

This work is devoted to the prevention of emotional burnout in healthcare workers. Having studied the literature on this issue, the authors can conclude that medical personnel are people who are highly susceptible to emotional burnout, due to the specifics of their professional career, high responsibility for the life and health of their patients. Burnout syndrome is a syndrome that develops gradually, against the background of prolonged psycho-emotional stress, and leads to the depletion of an individual's personal resources.

RABIES IN THE AMUR REGION

Klimchuk T. - the 2-nd year student
Supervisors: Cand. Med. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

Rabies is an acute, viral infectious disease of humans and animals, which always leads to death. It affects dogs, cats, foxes and is transmitted to humans through the saliva of a sick animal after a bite or scratch, through abrasions, the mucous membrane of the eyes, mouth, nose. Death occurs as a result of paralysis, which captures the respiratory muscles, and the heart muscle. Timely vaccination against rabies is the only prevention of the disease.

In the Amur Region, more than 1,000 people annually seek medical help for bites, slobbering, scratching by animals. Since the beginning of 2021, 9 cases of rabies have been detected in the Amur region. In the Amur region, the only case of human death from rabies in many years, according to Amurstat, was recorded in 2019.

THE ROLE OF SLEEP DISORDERS IN THE DEVELOPMENT OF SOMATIC PATHOLOGY

Melisova A. - the 4-th year student
Supervisors: Doc. Med. Sc., Prof. V.I. Pavlenko, E.A. Volosenkova

Sleep is a special genetically determined state of the human body, characterized by a natural sequential change of certain polygraphic pictures in the form of cycles, phases and stages.

Sleep disturbance (NS) is a fairly common problem in clinical practice. More than 36% of the world's adult population suffers from chronic sleep disorders (insomnia, hypersomnia, parasomnia). The most common clinical syndrome of NS is chronic insomnia (CI). There is evidence that insomnia and hypersomnia negatively affect human health.

The purpose of the work is to analyze the role of NS in the development of somatic pathology on the basis of literature data.

According to the literature, CI is associated with a high risk of cardiovascular and metabolic diseases (obesity, diabetes mellitus, bronchial asthma). It was found that the risk of developing arterial hypertension in CI increases by 5-20%, and mortality from cardiovascular diseases within 20 years increased by 45%. Numerous studies have shown that the risk of developing vascular accidents, in particular strokes, is associated with hypersomnia.

Promising area is the study of the effect of sleep disorders on the development of neurodeterministic, oncological, immune diseases and the intestinal microbiome.

RAILWAY ACCIDENTS ON THE TERRITORY OF RUSSIA

Zolotovsky I. - the 2nd year student
Supervisors: Cand. Med. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

Railway transport in Russia is recognized as the safest mode of transport. However, terrible catastrophes happen on the railways, taking human lives every day. The most common causes of accidents on railway transport are:

- natural physical wear of technical means; - violation of operating rules;- complication of technologies;- increase in the number, power and speed of vehicles;- increasing population density near railway facilities, non-compliance with safety rules by the population. According to Wikipedia, the number of accidents on railways increases annually. According to the classification statistics of the Ministry of Transport of Russia, for 2014-2019 there are 76 cases of transport accidents, of which 59 - crashes and 17 - accidents. The total damage from traffic accidents amounted to 1 billion 187 million rubles.

PHYSIQUE AND CONSTITUTION OF THE HUMAN BODY

Zolotovsky I. - the 2nd year student
Supervisors: A.E. Pavlova, E.A. Volosenkova

Physique — proportions and features of body parts, as well as features of the development of bone, fat and muscle tissues. Somatotype — type of physique - determined on the basis of anthropometric measurements (somatotyping), genotypically conditioned, constitutional type, characterized by the level and peculiarity of metabolism, a tendency to certain diseases, as well as psychophysiological differences. The proportions of the body mean the ratio of the sizes of individual parts of the body (trunk, limbs and their segments). Based on the calculation of body proportions in anatomy, three main types of human physique are distinguished: mesomorphic, brachymorphic, dolichomorphic. The mesomorphic type of physique (normosthenics) includes people whose anatomical features approach the average parameters of the norm. People of the brachymorphic type of physique (hypersthenics) have transverse dimensions, well-developed musculature, they are not very tall. The heart is located transversely due to the high-standing diaphragm. In brachymorphs, the lungs are shorter and wider, the loops of the small intestine are located mainly horizontally. People of dolichomorphic body type (asthenics) are characterized by a predominance of longitudinal dimensions, have relatively longer limbs, poorly developed muscles and a thin layer of subcutaneous fat, narrow bones. Their diaphragm is located lower, so the lungs are longer, and the heart is located almost vertically.

COVID-19. MEDICAL AND BIOLOGICAL CONSEQUENCES IN THE AMUR REGION

Kuznetsov I. – the 2-nd year student
Supervisors: Cand. Med. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

COVID-19 is a potentially severe acute respiratory infection caused by the SARS-CoV-2 coronavirus. It is a dangerous disease that may occur both in the form of acute respiratory viral infection of mild course and in severe form. The virus is able to infect various organs through direct infection or through the body's immune response. The most common complication of the disease is viral pneumonia. The most common symptoms of the disease include fever, fatigue and dry cough. The virus is spread by airborne droplets through inhalation of droplets sprayed in the air when coughing, sneezing or talking as well as through contact with the virus on the surface, followed by entry into the eyes, nose or mouth.

The aim of the study is to consider the rates of increase in the incidence of COVID-19 in all districts of the Amur region. From March 2020 to November 2021, 43,000 people fell ill, almost 35,000 recovered.

ROAD TRAFFIC ACCIDENTS

Ortun-ool, Homushku - the 2-nd year students
Supervisors: Cand. Med. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

The topic of a road traffic accident is very relevant today, because quite often you have to see the consequences of all sorts of accidents on the roads. It happens due to insufficient knowledge of traffic rules, and banal inattention leads to disastrous consequences.

According to statistics, the most common cause of road traffic accidents is non-observance of traffic rules and drunk driving.

The growth in the number of accidents is increasing every year. Many experts are alarmed to say that the death rate as a result of the accidents will soon stand in line with the number of victims from natural disasters.

In this report, we provide in detail the statistics of road traffic accidents in the republic of Tuva for 2020-2021.

CLINICAL AND ANATOMICAL FEATURES OF THE EYE SOCKET CAVITY IN THE NEWBORN

Pereverzev I. – the 2-nd year student
Supervisors: A.E. Pavlova, E.A. Volosenkova

The shape of the orbit resembles a triangular pyramid which axes slightly converge posteriorly. The base of the pyramid is faced forward and forms the entrance to the eye socket. Its narrowed apex is directed towards the back and slightly inside. Thus, the longitudinal axis of the eye socket converges posteriorly and diverges in front, forming an open anterior angle. This angle is always less than in children by its maximum value to 20-25 years of age. Age transposition of angle is of practical importance in clinical ophthalmology, as esotropia may decrease with age but exotropia may increase in children with the years. In the newborn orbit borders are smoothed, because of the weak development of brow ridges, zygomatic bone and its frontal process. The transverse size of the orbit ranges from 18,5-23 mm, the vertical size - 15-22 mm, so the depth of the orbit is relatively small. Size of the upper and infraorbital slits is relatively large.

OVERVIEW OF VACCINATION RATES AGAINST THE NEW COVID-19 CORONAVIRUS INFECTION IN THE AMUR REGION

Bondareva Yu. - the 2-nd year student
Supervisors: Cand. Tech. Sc., Yu. I. Derzhapolskaya, E.A. Volosenkova

Since December 2019, the world has been facing a pandemic situation, the 2019 coronavirus disease (COVID-19), a manifestation of coronavirus-2 infection with severe acute respiratory syndrome (SARS-CoV-2)

According to the statistics of the official Internet resource for informing the public about the coronavirus, Stopcoronavirus.RF at the beginning of November 2021 in the Amur region: 273749 persons (35% of the population, 45.4% of adults) were vaccinated with at least one component of the vaccine; 264719 persons were fully vaccinated (33.9% of the population, 43.9% of adults); 538468 persons were vaccinated in total; 25696 persons were revaccinated - 147 persons per day (0.02% of the adult population).

After analyzing statistical data on the subjects of the Russian Federation, it can be concluded that out of 85 subjects of the Russian Federation, the Amur Region ranks 62nd in terms of vaccination at the beginning of November. The government of the Amur Region decided to send on unpaid leave,

all state and municipal employees, unvaccinated without valid reasons, who do not have a medical discharge from December 15, and also expand the validity of QR codes about vaccination.

FEATURES OF THE CLINICAL COURSE OF COVID-19 IN CHILDREN

Bakhvalova A. – the 5-th year student
Supervisors: P.K. Soldatkin, E.A. Volosenkova

Children account for 6-7% of reported COVID-19 cases. The vast majority of diseases in children are associated with contacts with sick adults.

Features of the course: the infectious process can be interrupted at any stage; it can be prolonged depending on the presence of concomitant chronic pathology in the child; in adolescents, the course of the disease is more frequent than in adults; signs of exacerbation or decompensation of concomitant pathology may occur.

Clinical features of COVID-19 infection in newborns: unstable body temperature, low activity or poor nutrition, shortness of breath; unilateral or bilateral changes in the type of "frosted glass" on CT; presence among the surrounding people with confirmed COVID-19 infection, especially mothers. No intrauterine infection was detected.

Clinical manifestations of COVID-19 infection in premature infants: lability of temperature; respiratory symptoms may include dyspnea, moaning breathing, inflating of the wings of the nose, increased work of the respiratory muscles, apnea, cough and tachycardia. Sometimes there is weak sucking, lethargy, regurgitation, diarrhea, bloating.

When assessing the severity, the presence or absence of signs of respiratory failure is guided.

Thus, children have a mild and smooth course of the disease, deaths are extremely rare. However, it is children who play a huge role in the spread of the disease.

LEISHMANIASIS IN THE CLINICAL PRACTICE OF A DERMATOVENEROLOGIST

Pnivchuk A., Pnivchuk A. – the 5-th year students
Supervisors: Cand. Med. Sc., Assoc. Prof. N.E. Melnichenko, E.A. Volosenkova

Leishmaniasis is a group of protozoal diseases in humans and animals, characterized by damage to the skin and mucous membranes and internal organs. The causative agent penetrates into the thickness of the skin when bitten by a mosquit, forming a leishmaniasis granuloma in the area of the entrance gate. After 2 weeks, a necrotic focus is formed in leishmanioma - an ulceration with undermined edges, surrounded by a roller of infiltrated skin, with abundant discharge of a serous-purulent or hemorrhagic nature. Secondary "tubercles of seeding" develop around the primary leishmanioma, from which new ulcers form later, merging into a single ulcerated field.

Patient G., came to the ARSVD with complaints of rashes on the skin of the trunk, limbs and face, accompanied by soreness, burning, weeping. From the anamnesis: she was in Israel, did not notice insect bites, and associates skin rashes with herpes. Leishmaniosis was diagnosed. The diagnosis was verified by the laboratory of GBUZ "ARSVD". Treatment issues were discussed collectively at the medical commission of the GBUZ "ARSVD". Positive dynamics was noted against the background of the received therapy.

The given case is of interest to dermatovenerologists, infectious disease specialists, therapists due to the rare occurrence of the disease in Russia.

ATOPIC DERMATITIS IN CHILDREN

Kim A. - the 5-th year student
Supervisors: Cand. Med. Sc., Assoc. Prof. N.E. Melnichenko, E.A. Volosenkova

Atopic dermatitis in children is a chronic, relapsing inflammatory skin disease that increases sensitivity to food and contact allergens. Atopic dermatitis is the earliest and most frequent manifestation of the body's hypersensitivity reaction to environmental allergens: it accounts for 80-85% of allergy cases in young children. The prevalence of atopic dermatitis in the child population is growing steadily and is 10-15% in the age group under 5 years old; 15-20% - among school-age children. It has been proven that the risk of developing atopic dermatitis in children is 75-80% in the presence of hypersensitivity in both parents and 40-50% in the presence of atopy in one of the parents. For the childhood form of atopic dermatitis, erythematosquamous and lichenoid skin lesions are characteristic. In children, there is hyperemia and severe dryness of the skin with a large number of pityriasis scales; increased skin pattern, hyperkeratosis, profuse desquamation, painful cracks, persistent itching, aggravated at night. Skin changes are located mainly on the flexor surfaces of the limbs.

KAWA-COVID

Novachok A. – the 2-nd year student
Supervisors: A. Yu. Kryuchkova, E.A. Volosenkova

Against the background of the SARS-CoV-2 coronavirus pandemic, there have been reports of a serious increase in the number of cases of inflammatory syndrome, similar in symptoms to Kawasaki syndrome. But this is a slightly different pathology, which is called multi-inflammatory syndrome (MVS), or Cava-Covid. Doctors first met with an autoimmune disease, which was a consequence of Covid-19. Due to a lack of understanding of the new clinical picture, not a few children died. If Covid-19 in 80% of children is mild or asymptomatic, then MVS is severe. During Cava-Covid, changes in the general blood test are observed: high ESR, neutrophilosis, lymphopenia, thrombocytopenia. In blood biochemistry: increased transaminases and triglycerides, hypoalbuminemia appearance. Markers of acute inflammation are an increase in the level of plasma C-reactive protein, procalcitonin, ferritin, interleukin-6, and also coagulopathy is observed. Therapy for MVS is similar to therapy for Kawasaki disease due to the similarity in course. High-dose intravenous immunoglobulins, aspirin, hormones are used. They will not necessarily prescribe everything together. Treatment depends on the prevailing symptoms.

NEURONS WITH ROSE-LIKE AXONAL ENDINGS

Novachok A. – the 2-nd year student
Supervisors: S. V. Barannikov, E.A. Volosenkova

Scientists from the Allen Institute of Brain Sciences in the USA, together with Hungarian colleagues, have discovered a new type of cells in the human brain - neurons with rose-like axonal endings. An international team of researchers reported their discovery on August 27, 2018 in the journal Nature Neuroscience. These neurons are found exclusively in humans. New neurons make up about 10-15% of the first layer of the neocortex, the most developed part of the cortex that is involved in vision and hearing. They connect with pyramidal neurons, thereby regulating synaptic impulse transmission to their bodies due to selective inhibitory effect, causing postsynaptic potentials mediated by GABA receptors. The study of these cells can help in the prediction and treatment of many different neurological disorders in humans, thereby we will be able to understand psychiatric disorders more deeply and explain why many types of treatments work on animals, but fail on humans.

THE ROLE OF AQUAPORINS IN THE PHYSIOLOGY OF EXCRETION

Novachok A. - 2-nd year student
Supervisors: Cand. Biol. Sc. S.N. Hasanova, E.A. Volosenkova

Aquaporins are homotetrameric water channels that regulate the transport of water that occurs due to the osmotic gradient. Various forms of aquaporin play an important role in maintaining homeostasis of fluids at the organ and system levels. 5 types of aquaporins were detected in the kidneys: AQP1, AQP2, AQP3, AQP4 and AQP6. Aquaporin-1 (AQP1) is present in the epithelial cells of the proximal tubules and descending thin sections of the Henle loop and provides a concentration of 180 liters of blood up to a volume of 1.5 liters. Aquaporin-2 (AQP) is located in the epithelium of the collecting tubes of the kidney and in the outputting arterioles. If dehydration begins, then the nephron cells, sensitive to changes in osmotic pressure, detect an increase in the osmolarity of extracellular fluids. In response, the release of the hormone vasopressin (antidiuretic hormone) from the pituitary gland is stimulated. An increase in the level of this hormone in plasma leads to a decrease in the volume of urine and to its concentration. The binding of vasopressin to cell membrane receptors leads to rapid expression of aquaporin in the apical membrane of the collecting tubules of the kidneys. Thus, in response to an increase in the osmotic gradient that occurs during dehydration, aquaporins increase the reabsorption of water from urine into the blood. And the increased water intake or suppression of vasopressin secretion when consuming large amounts of alcohol or coffee lead to the excretion of large amounts of diluted urine by the kidneys.

HAIIUX VALGUS

Novachok A. – the 2-nd year student
Supervisors: N.P. Ambrosieva, E.A. Volosenkova

The valgus deviation of the thumb accounts for about 70% of all orthopedic pathologies. Hallux valgus is a deformation at the level of the medial metatarsophalangeal joint, with an increase in the angle between the first and second metatarsal bones, the first metatarsal bone begins to shift inward, and the first toe, held by the adductor muscle, shifts outward. Because of this, a bone growth begins to form on the head of the bone. The reasons may be: hormonal changes (Estrogen deficiency leads to a decrease in the formation of collagen in connective tissue. As a result, the capsule-ligamentous system, consisting of connective tissue, loses strength.); hereditary predisposition; pregnancy; longitudinal flat feet; injuries to the foot and lower leg; wearing uncomfortable shoes - narrow and with heels more than three to four centimeters. If the situation worsens, the patient may face not only severe pain, but also serious problems: impaired blood supply to tissues; arthritis and arthrosis; acute inflammatory process (bursitis). Treatment should begin with the selection of comfortable shoes, orthopedic insoles and exercises to strengthen the muscles. The use of a hallux valgus caliper splint is a retainer that holds the joint in its normal position.

STATISTICS OF CHILDREN WHO FELL OUT OF THE WINDOWS IN RUSSIA

Shtyrlina D. - the 2-nd year student
Supervisors: Cand. Med. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

Security measures: 1) when opening the windows for ventilation, make sure that the child is under your supervision, 2) during ventilation, open the transoms and vents. If you do open windows, put limiters on them, 3) if it is not possible to install limiters, remove the handles from the windows and use them as needed, keep them out of the reach of children, 4) if you install a grate on the window,

ensure that it can be opened quickly in case of fire. The gap between the bars of the grate should not be more than 10 cm, 5) do not allow the child to go out on the balcony without an adult
Statistics: 2017: 848 children were injured; 106 of them died. 2018: 905 children were injured; 123 of them died; 33 - remained disabled. 2019: 125 children were injured; 15 – died. 2020: 1339 children were injured; 145 - died.

THE GREAT VIROLOGIST - CHUMAKOV

Bogacheva S. – the 6-th year student
Supervisors: P.K. Soldatkin, E.A. Volosenkova

Mikhail Petrovich Chumakov (1909 - 1993) - a Soviet virologist, creator of polio and tick-borne encephalitis vaccine.

In one of his expeditions Chumakov became infected with tick-borne encephalitis, after this situation: the pathogen was discovered; it was established that people fell ill after a tick bite; methods of non-specific and serological prevention of the disease were developed.
In 1956-1958, the poliovirus strain was subjected to laboratory testing. After which the property of areactogenicity was revealed.

In addition, the scientist was engaged in the development of vaccines for equally dangerous diseases.

M.P. Chumakov's contribution cannot be overestimated.

DIAGNOSIS OF AUTISM SPECTRUM DISORDERS

Buinova Y., Likhno E. – the 4-th year student
Supervisors: M.I. Arkhipova, E.A. Volosenkova

Autism Spectrum Disorder (ASD) is a spectrum of psychological characteristics describing a wide range of abnormal behavior and difficulties in social interaction and communication, as well as severely limited interests and frequently repeated behavioral acts.
The terms "ASD" and "autism" in the general sense discussed above are synonymous.
Autism spectrum disorder is diagnosed by identifying symptoms of autism in a child's behavior and development.

The diagnostician observes the child and can play or talk with him. He also asks those close to the child about how the child behaves at home and about the developmental characteristics of this child from birth. Occasionally, professionals may ask parents to fill out questionnaires and questionnaires, as well as conduct special diagnostic interviews with parents. All of this helps in identifying and clarifying the symptoms of autism.

But so far there are no instrumental methods or analyzes that make it possible to establish or refute the diagnosis of autism with a 100% probability.
Symptoms of autism become apparent closer to two or three years of age. At this age, as a rule, it is possible to diagnose the presence of autism quite confidently. As a child grows older, most often the severity of autism symptoms becomes less pronounced, but in most cases they remain more or less noticeable.
The main WHO criteria for the diagnosis of ASD:
1. Qualitative disorders in the field of social interaction.
2. Deficit of the need for communication, depending on the degree of disorders.
3. Expressed behavioral disorders, manifested in limited and stereotyped models of various types of activity.
4. Specificity and variability of intellectual and speech development.

5. Motility disorders.
6. Heightened sensitivity.
7. Self-harm.
8. Impairment of the sense of danger.

CLINIC OF ARTERIOVENOUS MALFORMATIONS OF THE BRAIN

Likhno E., Buinova Y. – the 4-th year students
Supervisors: Cand. Med. Sc., D.Y. Konkova, E.A. Volosenkova

Arteriovenous malformation (AVM) is a congenital or hereditary pathological connection between veins and arteries. The anomaly is caused by a mutation of the RASA1 gene (inherited in an autosomal dominant manner) or as a result of intrauterine local disorders in the formation of the cerebral vascular network, developing with an increased radioactive background, the presence of intrauterine infections, diseases of a pregnant woman (diabetes mellitus, chronic glomerulonephritis, bronchial asthma), intoxication, bad habits of a pregnant woman (drug addiction, smoking, alcoholism), when taking pharmacological drugs during pregnancy that have a teratogenic effect.

Pathological influence of AVM on the brain: rupture of pathologically altered vessels that form the AVM, or aneurysm of the artery feeding the AVM; chronic circulatory failure caused by the discharge of blood from an artery into a vein; breakthrough syndrome of normal perfusion pressure.

There are two types of clinical manifestations of cerebral AVM: hemorrhagic and torpid.

Hemorrhagic type (50 - 70% of all cases) is characterized by a small size of the malformation node and drainage into the deep veins of the brain, localization in the posterior cranial fossa. It is clinically manifested by arterial hypertension, later hemorrhage may develop (most often - subarachnoid).

Torpid type is characterized by a large size of the malformation node, localization in the cerebral cortex. Clinically manifests itself as seizures, cluster headaches, and neurological deficits. Depending on the location, the patient may develop muscle weakness, impaired coordination, dizziness, visual impairment.

THE VALUE OF KI-67 IN THE DIFFERENTIAL DIAGNOSIS OF LUNG CARCINOID TUMORS BASED ON BIOPSY MATERIAL

Nuzhenko E. – the 3rd year student
Supervisors: E.E. Abramkin, E.A. Volosenkova

Lung carcinoid is a tumor that develops from neuroepithelial cells of the mucous membrane of the respiratory tract and parenchyma, it is about 1-2 % among other types of lung neoplasms.

In recent years, the prevalence of carcinoids of the respiratory system (trachea, bronchi, lungs) has increased significantly. This is due to the use of modern laboratory and instrumental techniques that allow the diagnosis of asymptomatic and low-symptomatic tumors.

Determination of the proliferative activity of tumor cells by calculating the Ki-67 index is a necessary condition for modern morphological diagnostics, which serves as a basis for further clinical assessment of the aggressiveness of the course of the disease and the reasoned appointment of appropriate drug treatment regimens.

The Ki-67 index is a generally recognized and widely used marker of proliferative activity. The detection of Ki-67 indicates tumor cells that are in the division phase of the cell cycle. It allows us to understand how actively and quickly the division of tumor cells occurs, and, consequently, the growth rate of the neoplasm, assess the risk of metastasis, determine the tactics of therapy and the likely response to it, the prognosis of the disease.

This indicator is especially useful when considering small diagnostic material, in which it is often impossible to assess the adequate field of view of the microscope and reflect the exact proliferative activity when counting mitoses.

EAR DEVELOPMENT

Glyzina Yu. – the 2-nd year student
Supervisors: A.E. Pavlova, E.A. Volosenkova

The inner ear. An embryo of 3.5 weeks has an auditory placode in the form of a thickening of the ectoderm on both sides of the rhomboid brain. Then, it turns into an auditory fossa, and then into an auditory vesicle, which is the rudiment of the membranous labyrinth. At week 6, semicircular canals and a cochlear duct form from the auditory vesicle. At the same time, ganglia of the vestibular-cochlear nerve are formed. A cartilaginous capsule develops in the circumference of the membranous labyrinth. As a result of its ossification, a bone labyrinth is formed.

The middle ear. The cavities of the middle ear develop from the endoderm. The tympanic cavity and the auditory tube develop from the I gill pocket. Auditory ossicles are formed from the mesenchyma of the I and II visceral arches.

The outer ear. The external auditory canal develops from the I gill pocket, and the membrane separating this furrow from the rudiment of the tympanic cavity is transformed into the tympanic membrane.

POTENTIAL PROBLEMS OF THE MEDICAL SUPPLY SYSTEM IN THE CONDITIONS OF MODERN WARFARE AND EMERGENCIES

Drobyaskina K. – the 2-nd year student, Konev A. – the 5-th year student
Supervisors: Cand. Tech. Sc., Yu. I. Derzhapolskaya, E.A. Volosenkova

The article presents an attempt to assess the problems that the system of medical assistance to victims in the conditions of modern military operations and emergencies may face. A characteristic feature of wars with modern weapons is the increase in firepower and the destructive power of weapons. According to the authors, the first potential threat is the issue of transport and logistics. There is a possible threat of inconsistency between the medical and technical equipment of functional units, namely, domestic medical equipment and technic, with the quantitative and qualitative requirements of modern combat operations.

The main role in the organization of medical and sanitary provision of the affected population in a wartime emergency will belong to the disaster medicine system of the constituent entities of the Russian Federation, therefore, the next potential threat is the decentralization of management. In addition, a possible threat is highlighted: the failure of the training of the leading personnel of the service, its management bodies, medical specialists of the formations of the disaster medicine service to work in the conditions of modern wartime. It can also become difficult to assess the characteristics and number of damages, the amount and structure of sanitary losses. As a result of errors in preliminary planning, the estimated need for manpower and resources, an analysis of some scientific research in the relevant field is presented. Key potential threats are identified that motivate more in-depth specialized research.

INNERVATION ZONES OF THE TRIGEMINAL NERVE; SENSITIVE COMPONENT

Drobyaskina K. – the 2-nd year student
Supervisors: A.E. Pavlova, E.A. Volosenkova

The sensory part of the trigeminal nerve is divided into three branches. The eye branch of the trigeminal nerve provides cutaneous sensitivity of the forehead and scalp anterior to the vertex, part of the nose and upper eyelid, and the upper half of the cornea. The maxillary branch provides cutaneous sensitivity to the part of the nose, upper lip, cheek, lower half of the cornea, upper teeth and gums of the upper jaw, palate and nasal mucosa. The mandibular ramus provides cutaneous sensitivity to the lower lip, chin, part of the lower jaw, ear and mouth, lower teeth and gums of the lower jaw, and the anterior 2/3 of the tongue.

N.V. TIMOFEEV-RESOVSKY - THE WORLD GENETICS LEGEND

Ksendzik K. – the first-year student
Supervisors: V.A. Naumenko, E.A. Volosenkova

Study and work. Genetic and evolutionary research.
Germany and misunderstandings. Is he a traitor or a great scientist?
The contribution to science while in Germany. "To return or not to return?", - that is the question (refusal to return to Russia).
The scientist was detained by the NKVD task force: exile, illness.
Soviet Atomic Project. Rehabilitation at home (radioactive boom and another contribution to science).

On October 21, 1951, N.V. Timofeev-Resovsky was released from prison for his excellent work in organizing the Laboratory "B". Then, the scientist continued his research experimental work.

ALZHEIMER'S DISEASE

Aliyeva L. - the 4-th year student
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Alzheimer's disease is a chronic neurodegenerative disease with slow onset and significant deterioration over time. In 70% of cases, Alzheimer's disease leads to dementia. The disease manifests itself with difficulty of remembering recent events or conversations and organizing thoughts (early warning sign). Memory problems. Causes may be the following: a combination of genetic factors, lifestyle and environmental factors that affect the brain over time. In less than 1% of cases, Alzheimer's disease is caused by specific genetic mutations. The exact reasons for the development of Alzheimer's disease are not fully understood, but it is based on the pathological activity of specific proteins: beta-amyloids; Tau proteins. The disease is more common in women. There are three stages of Alzheimer's disease: first (prementia, early dementia), second (moderate dementia), third (severe dementia). The transition from one stage to another correlates with a decrease in the MMSE (Short Mental Status Scale) score, which is a reliable tool for tracking disease dynamics. On average, people with Alzheimer's disease live 3-11 years after the disease is diagnosed, but some live 20 years or more. Life expectancy depends on the degree of impairment, when making diagnosis.

HYPERTHYROIDISM

Tarasov Ch., Shelkunov A. – the 3-rd year students
Supervisors: E.E. Abramkin, E.A. Volosenkova

Hyperthyroidism is a condition of hyperfunction of the thyroid gland, which is accompanied by excessive production of thyroxine and triiodothyronine. An increase in the level of hormones in the blood accelerates metabolic processes in the body and has a negative effect on almost all organ systems. Symptoms of hyperthyroidism reduce the quality of life of the patient.

Epidemiology

The main cause of hyperthyroidism in iodine–rich areas is autoimmune Graves' disease, in iodine–deficient areas - functional autonomy of the thyroid gland. In 2001, the prevalence of hyperthyroidism in Russia was 18.4 cases per 100,000 of population. Hyperthyroidism occurs mainly in women. The frequency of previously undiagnosed thyrotoxicosis among women is 0.5%, the incidence is 0.08% of women per year.

THE EFFECT OF BRONCHIAL ASTHMA ON THE COURSE OF COVID-19

Grigoriev D. - the 6-th year student
Supervisors: Prof. O.B. Prikhodko, Assoc. Prof. I.V. Kostrova, E.A. Volosenkova

Currently, the pathophysiology of bronchial asthma (BA) in patients with confirmed COVID-19 has not been sufficiently studied. After the introduction of SARS-CoV-2 into the host cell, innate immunity is activated with the expression of interleukin-6, tumor necrosis factor etc., which recruit effector cells (neutrophils, macrophages, etc.), followed by the launch of a cascade of pro-inflammatory cytokines. In cases where the acquired immune response is insufficient to eliminate the virus, uncontrolled activation of innate immunity occurs with the release of anti-inflammatory cytokines (cytokine storm), which is considered a pathogenetic factor in the rapid progression of the disease. The type 2 immune response causes pathophysiological changes in BA, including the production of immunoglobulin E, local eosinophilia, mucus production, activation of effector cells (eosinophils, basophils, mast cells). It is assumed that the type 2 immune response and medications for the treatment of patients with BA may provide a potential protective effect against SARS-CoV-2.

ANOMALIES OF THE OPTICAL NERVE DEVELOPMENT

Maslova M. – the 2-nd year student
Supervisors: A.E. Pavlova, E.A. Volosenkova

Aplasia of the optic nerve is the absence of fibers - the axons of the retinal ganglion cells. It is observed in severe malformations of the central nervous system.

Hypoplasia of the optic nerve is a defect caused by a decrease in the number of nerve fibers due to the underdevelopment of retinal ganglion cells. It can be one-sided or two-sided. The optic nerve looks small, pale, and shapeless. The visual acuity of the affected eye is reduced in proportion to the degree of disc hypoplasia. Strabismus, visual field defects, and reduced optic nerve openings on the affected side are also noted.

Coloboma of the optic nerve disc is a defect in the form of a crater-shaped depression in the center or on the periphery of the disc, touching only the nerve itself and its membranes. It is a rare defect caused by non-closure of the embryonic gap.

Megalopapilla - an increase in the size of the optic nerve disc.

INDUSTRIAL SANITATION AND OCCUPATIONAL HYGIENE OF MEDICAL WORKERS IN THE CONDITIONS OF THE FIGHT AGAINST COVID-19

Maslova M. – the 2nd year student
Supervisors: Cand. Tech. Sc., Yu. I. Derzhapolskaya, E.A. Volosenkova

Occupational hygiene is a preventive medicine that studies the conditions, the nature of work, their impact on human health and functional state and develops practical measures aimed at preventing the harmful and dangerous effects of factors in the working environment and the labor process on a person. Occupational hygiene is closely related to industrial sanitation, that is, a system of organizational measures and technical means that prevent or reduce the impact of harmful production factors on workers.

The studies conducted have identified the following risks that healthcare workers are exposed to in the fight against COVID-19. These risks include: getting infected with COVID-19 while caring for patients; dermatological disorders and heat stress from prolonged wearing of PPE; toxic effects of disinfectants used in large quantities; psychological stress; overwork; stigma, discrimination, physical and psychological violence and harassment.

ANOMALIES OF THE DEVELOPMENT OF THE VISUAL ORGAN

Korsakova A. - the 2-nd year student
Supervisors: A.E. Pavlova. E.A. Volosenkova

The most common eye development abnormalities are myopia, hyperopia, astigmatism. Rare anomalies include:

- coloboma (a gap in the iris or ciliary body);
-ocular cyst (cystic cavity in place of the missing eyeglass);
- anophthalmia (absence of an eyeball):
a) primary one is rare, due to the absence of an eye tab;
b) secondary one (false) is due to a stop in the development of the eye at the stage of the eye bladder;
-cyclopia (the presence of one eye socket along the midline in the forehead area, which either does not contain an eyeball, or in a reduced, normal or doubled form)
-aphakia - the absence of the lens, it may be congenital or acquired.

APPLICATION OF DISINFECTANTS IN COVID-19 CONDITIONS

Korsakova A. - the 2-nd year student
Supervisors: Cand. Tech. Sc., Yu. I. Derzhapolskaya, E.A. Volosenkova

In the difficult time of the pandemic, in order to prevent the spread of infections, it is necessary to carry out comprehensive sanitary, anti-epidemic and preventive measures, the basis of which are disinfection measures. A special direction of anti-epidemic measures concerns the hygienic treatment of hands, as the central link of cross-contamination by microscopic organisms. Hygienic treatment of one pair of hands provides at least 3 ml of alcohol skin antiseptics. The alcohol content is preferably not lower than 70% in a multicomponent preparation. Skin antiseptics should be placed mainly in non-contact (sensory), or in elbow dispensers. A comparative analysis of the consumption of disinfectants after the onset of the pandemic showed a sharp increase in demand for alcohol-containing skin antiseptics. In comparison with chlorine-containing disinfectants and concentrates, the consumption of skin antiseptics increased by 31%.

HEALTH INDICATORS OF PREMATURE INFANTS WITH LOW, VERY LOW AND EXTREMELY LOW BIRTH WEIGHT AND OUTCOMES OF PERINATAL PATHOLOGY ACCORDING TO THE RESULTS OF CATAMNESTIC OBSERVATION AT A POLYCLINIC

Vasilyeva D., Zharikova E. – the 6-th year students
Supervisors: Cand. Med. Sc., Assoc. Prof. L.I. Monogarova, E.A. Volosenkova

Purpose of the study: to assess the health indicators of premature infants born with low (LBW) and extremely low body weight (ELBW) according to the results of follow-up observation, taking into account the risk factors of the ante-intra- and postnatal period of development.

The work was carried out on the basis of Children's polyclinic No. 4 in Blagoveshchensk.

The study group included 14 premature babies (children born in 2012-2020), who were under the supervision of specialists of the children's polyclinic, of which 2 were born with ELBW and 12 were born with LBW.

The control group consisted of 10 full-term babies.

Statistical processing of the results obtained was carried out with the application of an information system for maintaining an outpatient card, functioning at the polyclinic.

It was found that in the groups of children examined, the risk factors for the birth of premature babies were: a history of infertility and in vitro fertilization, the presence of inflammatory diseases of the female genital organs. Multiple pregnancies are most often the cause of grade 1–2 prematurity; an unsuccessful obstetric history (miscarriages, ectopic pregnancies and a history of antenatal fetal death) is more often observed in very premature infants and is an independent risk factor for disability by the first year of life. Deeply premature babies are born in a more serious condition and more often require resuscitation compared to patients in other groups. Thus, in children with ELBW, severe forms of BPD, pathology of sensory systems are more often diagnosed. It forms a high level of disability due to somatic diseases, as well as severe ischemic and / or hemorrhagic brain lesions, which lead to disability due to diseases of the nervous system.

It is advisable to take into account the small gestational age at birth as a predictor of possible retardation of ontogenesis and a predictor of somato-neurological disorders caused by organic damage and / or immaturity of brain structures; and deeply premature babies, with low and extremely low body weight, should be considered as a contingent of a high-risk group for the formation of disorders of motor, mental and speech development, and begin habilitation of development in parallel with the implementation of drug therapy.

HFRS (HEMORRHAGIC FEVER WITH RENAL SYNDROME)

Matyukhova T., Orlova M. - the 3rd year students
Supervisors: E.E. Abramkin, E.A. Volosenkova

Hemorrhagic fever with renal syndrome is a viral zoonotic disease common in certain territories, including the Amur region. It is characterized by an acute onset, vascular damage, the development of hemorrhagic syndrome, hemodynamic disorders and severe kidney damage with the possible appearance of acute renal failure.

The causative agent of HFRS is the Hantaan Virus. The carrier is a red vole and therefore this disease is called "Mouse fever" or "Mouse". One can catch the disease at any time of the year, but it is most often registered in summer and autumn. Infection occurs more often in nature, especially when in contact with objects contaminated with rodent secretions. From the moment of contamination to the manifestation of the disease, 2-5 weeks pass.

The most characteristic viral kidney lesions are as follows: an increase in size, capsule tension, areas of necrosis and hemorrhage in the cortical layer, and in the medulla - pronounced serous-hemorrhagic apoplexy.

There are 4 stages of the disease in the clinical picture: 1) Feverish, 2) Oliguric, 3) Polyuric and 4) Convalescence.

HALLMARKS OF CANCER

Trach S. – the 3rd year student
Supervisors: E.E Abramkin, E.A. Volosenkova

Cancer is among the leading causes of death worldwide. At the moment, there are more than 100 types of malignant tumors. All of them have their own characteristics in growth and

metastasis. Also, there are many hypothetical causes and risk factors for malignancy. But there are a number of common features, which are characteristic of all malignant cells in comparison with normal ones.

In 2000, Douglas Hanahan and Robert A. Weinberg published an article in the journal Cell, where they described 6 hallmarks of cancer: sustaining proliferative signaling, avoiding cell growth suppressors, resisting cell death, inducing angiogenesis, activating invasion and metastasis, gaining cellular immortality.

The author considers that the importance of this topic can hardly be overestimated. It is the basis for understanding the main aspects of carcinogenesis. Also, the understanding of molecular mechanisms made it possible to develop differential diagnosis of oncological diseases using specific cancer markers.

FEATURES OF THE CLINICAL COURSE OF DIABETES MELLITUS IN PATIENTS WITH COVID-19

Tolstova I. – the 5-th year student
Supervisors: Assoc. Prof. O.A. Tanchenko, E.A. Volosenkova

The effect of COVID-19 on diabetes mellitus. For practicing physicians, it is necessary to have an idea about the features of the course of COVID-19 in patients with diabetes in order to choose the right routing tactics for a patient with diabetes and hyperglycemia management tactics. Epidemiological data have shown that the new coronavirus infection increases the risk of developing type 2 diabetes in persons with obesity, impaired glucose tolerance and impaired fasting glycemia, as well as in elderly patients. In patients with DM, COVID-19 infection: - increases the risk of hyperglycemia, up to acute complications, such as ketoacidotic, lactatacidotic coma; -increases the risk of developing an euglycemic ketoacidotic condition; - increases the risk of hypoglycemia (up to 10% of cases); - increases the risk of developing hypercoagulation syndrome; - increases the risk of secondary bacterial infection and sepsis (especially for patients with type 1 diabetes). In the debut of COVID - 19, patients with DM have a milder form, 50% of patients are diagnosed with an asymptomatic course. Symptoms such as fever, chills and chest tightness are hidden and manifest in fewer patients. Conditionally mild course leads to the fact that less attention is paid to patients. The level of glycemia is the only stable and earliest indicator of prognosis.

The turn of glycemia may be the first symptom of the disease. When symptoms appear, the patient is shown hospitalization and emergency laboratory diagnostics to verify a viral infection.

FEATURES OF THE COURSE OF MYOCARDIAL INFARCTION ON THE BACKGROUND OF DIABETES MELLITUS

Tolstova I. – 5-th year student
Supervisors: Assoc. Prof. O.A. Tanchenko, E.A. Volosenkova

Diseases of the cardiovascular system are the main cause of mortality and disability of the population in economically developed countries of the world, they account for more than 17 million deaths per year. On average, 520 thousand cases of acute coronary syndrome are registered in our country annually, 36.4% of which are MI, and 63.6% are unstable angina. It is known that one of the most common diseases that significantly complicates the course of all cardiovascular pathologies, especially MI, is diabetes mellitus (DM). The mortality rate from MI among patients suffering from DM is up to 45%. The aim of the research was to study the epidemiology and features of the clinical course in the comorbid course of diabetes mellitus and Feoktistova infarction. The study analyzed 252 medical histories of AMI patients who were treated in the cardiology department of the Kamchatka

Regional Hospital in 2020. Abdominal type of obesity of the I degree was diagnosed in 42.6% of patients, II degree - in 38.3%, III degree - in 19.1%. Arterial hypertension of the 1st degree was diagnosed in 35.4% of patients, of the 2nd degree - in 42.1%, of the 3rd degree - in 22.5%. Complications in the form of cardiogenic shock were detected in 21.6% of cases, pulmonary edema - in 17.8%, cardiac arrhythmias - in 9.3%. Thus, with concomitant diabetes mellitus, patients with MI are significantly more likely to have a pain-free variant of the onset of the disease, characterized by a complicated course. The severity of MI in patients with DM is aggravated by the duration of diabetic experience, decompensated glycemia and blood pressure, dyslipidemia, the presence of abdominal obesity, diabetic nephropathy and neuropathy.

PATHOMORPHOSIS OF HEPATITIS C

Gasymova N., Kalashnikova A. – the 3rd year students
Supervisors: E.E Abramkin, E.A. Volosenkova

Hepatitis C is a viral anthroponotic infection with predominant liver damage, prone to a long-term chronic low-symptom course, and the outcome is cirrhosis of the liver and primary hepatocellular carcinoma. The pathogen - HCV belongs to the Flaviviridae family, the genus of Hepacivirus. HCV E1 and E2 play an essential role in HCV penetration into host cells. After the virus attaches to the cell, its shell merges with the cell membrane, and HCV penetrates into the hepatocyte by endocytosis. In the cytoplasm of the hepatocyte, the virions are "stripped" and the virion plus-HCV RNA is released into the cytosol. HCV RNA cannot replicate in the nucleus, but has a site by which it binds to the ribosome in the cytoplasm, and HCV plus-RNA acts as a matrix RNA from which viral proteins are translated. As a result of translation, a polyprotein is synthesized on ribosomes, from which, after several cleavages under the action of cell proteases and virus, 10 HCV proteins are formed, which are modified into mature proteins, form a replicative complex on the membranes of the endoplasmic network, and also assemble into new viral particles and are secreted from cells through the Golgi apparatus by exocytosis. Extrahepatic HCV replication is also possible, for example, in peripheral blood lymphocytes. Liver cell damage is caused not only by the direct cytopathic effect of virus components or virus-specific products on cell membranes and hepatocyte structures, but also by immunologically mediated (including autoimmune) damage directed at intracellular HCV antigens
Thus, hepatitis C is among the most dangerous types of viral hepatitis. The hepatitis C virus is also called the "affectionate killer". It received such an unflattering epithet due to the fact that at the initial stage the disease is not accompanied by any symptoms at all. There are no signs of classic jaundice, and there is no soreness in the area of the right hypochondrium. It is possible to detect the presence of the virus no earlier than a couple of months after infection. And before that, there is completely no reaction of the immune system and it is impossible to detect markers in the blood, and therefore it is not possible to carry out genotyping. The peculiarity of HCV also includes the fact that after getting into the blood during reproduction, the virus begins to mutate rapidly. Such mutations prevent the infected person's immune system from adjusting and fighting the disease. As a result, the disease can go on for several years without any symptoms, followed by cirrhosis or a malignant tumor almost immediately. Moreover, in 85% of cases, the disease goes from acute to chronic. The hepatitis C virus has an important feature - the diversity of the genetic structure.

MODERN MICROSURGERY IN RUSSIA

Tokmakova N., Voyko L., Kurgina D. – the 3-rd year students
Supervisors: Doc. Med. Sc. V.V. Grebenyuk, E.A. Volosenkova

Relevance: In recent years, there has been a significant increase in severe limb injuries, among which injuries of the upper limbs prevail over injuries of the lower ones. The consequences of hand injuries with damage to tendons and nerves are the absence of one or another function of the fingers and hands, deep and irreversible trophic disorders. The development of microsurgery has significantly changed the situation; in a short time, the approach to the treatment of patients with previously perceived minor injuries was revised.

Purpose: To study the demand and effectiveness of microsurgery in Russia

Research (own): A retrospective analysis of microsurgical operations in the Russian Federation from 2013 to 2021 was conducted. A clinical example of a successful outcome of replantation of a detached hand is presented. The patient was admitted with traumatic hand amputation. Osteosynthesis was performed under regional anesthesia. The extensor and flexor tendons of the fingers and hand were restored. The median and ulnar nerves and the superficial branch of the radial nerve were sutured. Three saphenous veins of the hand were restored. Microvascular sutures were placed on the radial and ulnar arteries. After starting the blood flow, the blood supply to the replanted hand was restored immediately.

There were no complications in the postoperative period, the sutures were removed on the 12th day. The patient underwent a full course of rehabilitation treatment. After 5 years, the patient subjectively assesses the functional result of the operation as satisfactory. Movement in the wrist joint is full. Tactile and pain sensitivity is fully restored. The appearance of the hand is aesthetically pleasing. All major hand grips have been restored.

Conclusion: Thus, microsurgical operations in the Russian Federation are constantly improving, which will undoubtedly lead to positive results of treatment of patients after traumatic amputations and socio-economic effect for the country!

AMYLOIDOSIS OF THE KIDNEYS

Nasibova A. – the 3rd year student
Supervisors: N.R. Levchenko, E.A. Volosenkova

Amyloidosis of the kidneys (amyloid nephrosis, amyloid dystrophy of the kidneys) is one of the most frequent manifestations of general amyloidosis - a systemic disease characterized by the formation and deposition of a special, not normally found glycoprotein substance with a fibrillar structure – amyloid in various organs and tissues.

In terms of frequency, renal amyloidosis is in second place (after glomerulonephritis) among the causes of the development of nephrotic syndrome in middle-aged people. According to N.S. Molchanov, this accounts for 6.1-9.1% of all kidney diseases. The most widespread are three theories of the pathogenesis of amyloidosis: 1) the theory of dysproteinosis, according to which amyloid is a product of perverted protein metabolism; 2) cell theory, which considers amyloid substance as a product of perverted protein synthesis by cells of the mononuclear phagocyte system (reticuloendothelial system), and not as a precipitate of proteins from blood serum; 3) the immunological theory, which has become widespread in recent years. Its supporters believe that amyloid is formed as a result of the antigen-antibody reaction, which occurs under the condition of insufficient production of antibodies and an excess of antigen. At present, the scheme of morphogenesis of amyloidosis is as follows: cellular transformation in the system of mononuclear phagocytes with the appearance of cells capable of synthesizing fibrillar amyloid protein; synthesis of

the main component of amyloid - fibrillar protein by amyloidoblasts; aggregation of fibrils with the formation of a "framework" of amyloid substance; connection of aggregate fibrils with plasma proteins and glycoproteins, as well as with acidic mucopolysaccharides of the tissue; the formation of a complex glycoprotein - amyloid.

Patients with amyloidosis are worried about weakness, lack of appetite, the presence of edema that occurs on the lower extremities. In some cases, there is dense edema on the fingers, later with atrophy of soft tissues, which simulates scleroderma, and with painful swelling, stiffness of the joints - rheumatoid arthritis.

MODERN VIEW ON THE THERAPY OF ATHEROSCLEROSIS WITH MEDICINAL PLANTS

Nasibova A. - the 3rd year student
Supervisors: Assoc. Prof. R.A. Anokhina, E.A. Volosenkova

Diseases of the cardiovascular system and atherosclerosis underlying many of them are among the main problems of modern medicine. One of the methods of therapy for atherosclerosis is the use of herbal medicine.

Medicinal plants for the treatment of atherosclerosis are used not only in folk but also in scientific medicine. These are, for example, such plants as hawthorn, valerian, motherwort, mint, garlic and some others. Normalization of lipid metabolism under the influence of medicinal plants in the patient's body consists in the fact that they remove cholesterol, TG, LDL, VLDL from the body, that is, atherogenic factors and increase the level of HDL, which is an antiatherogenic factor. This action is provided by a complex of biologically active substances (BAS), for example, vitamins, organic acids, essential oils and flavonoids, which are contained in plants. Plants that contain flavonoids, carotenoids, citric acid and other organic acids have an antihypoxic effect. These biologically active substances increase the body's resistance to oxygen starvation or reduce its negative effect on organs and tissues. Flowers of mountain arnica, calendula officinalis, tansy, leaves of warty birch and linden, etc., have an antihypoxic effect. The anticoagulant effect of medicinal plants is used primarily for the prevention of thromboembolic complications. Thus, medicinal plants play an important role in the prevention and complex therapy of atherosclerosis. Their advantages over synthetic drugs are good tolerance, the possibility of long-term use without the development of addiction, and good therapeutic efficacy.

ATHEROSCLEROSIS

Mamatov A. – the 3-rd year student
Supervisors: E.E Abramkin, E.A. Volosenkova

Atherosclerosis is a chronic disease resulting from a disturbance of fat and protein metabolism, characterized by damage to the vessels of the muscular and muscular-elastic types in the form of focal deposits in the intima of lipids, proteins and reactive proliferation of connective tissue with the formation of plaques, narrowing the lumen and leading to insufficient blood supply to organs. The outcome of atherosclerosis is vascular occlusion and necrotic changes in the organ fed by the damaged vessels. Atherosclerosis progresses asymptomatically for years until a clinical threshold is reached. The onset of symptoms may be gradual or abrupt. The main pathological and clinical effects of atherosclerosis affect the brain, kidneys, aorta, peripheral and visceral arteries, and the heart.

A NEW ANTIPLATELET AGENT

Alatartseva S. – the 3rd year student
Supervisors: Assoc. Prof. R.A. Anokhina, E.A. Volosenkova

A new antiplatelet agent - Cilostazol (Latin Cilostazolum) - a selective inhibitor of phosphodiesterase III - has a vasodilating, antiplatelet and antithrombotic effect. It is a derivative of quinolinone.

The primary mechanism of the pharmacological action of cilostazol is the inhibition of phosphodiesterase of type 3 and, consequently, an increase in the intracellular content of cAMP. In the liver, cilistazole is metabolized under the influence of the main isoenzyme of the cytochrome P450 system - CYP3A4 and to a lesser extent - CYP2C19 and CYP1A2.

Cilostazol reversibly inhibits platelet aggregation caused by various stimuli, surpassing aspirin, dipyridamole, ticlopidine and pentoxifylline in this respect. It also inhibits the formation of arterial blood clots and proliferation of smooth muscle cells, has a vasodilating effect.

Additional potentially beneficial effects of cilostazol found during clinical studies were a decrease in serum triglyceride levels and an increase in the concentration of cholesterol of the high-density lipoprotein fraction.

INDICATIONS:

After stenting (in combination with aspirin).

To increase the maximum painless walking distance in patients with intermittent lameness, who do not have pain at rest and signs of peripheral tissue necrosis (peripheral artery disease, Fontaine stage II).

Currently, the prospects of its use are being evaluated in order to prevent recurrent stroke, thrombosis and restenosis after reconstructive vascular operations, as well as for the treatment of post-stroke syndrome.

Contraindications:

Hypersensitivity to cilostazol or any component of the drug, severe renal insufficiency (creatinine clearance < 25 ml/min), moderate or severe hepatic insufficiency, congestive heart failure, pregnancy, lactation, any known tendency to bleeding (for example, gastric or duodenal ulcer in the acute stage, recent hemorrhagic stroke (up to 6 months), proliferative form of diabetic retinopathy, weakly controlled arterial hypertension).

It is contraindicated to prescribe it to patients with ventricular tachycardia, ventricular fibrillation or multilocular ventricular ectopia who have or have not undergone appropriate therapy; with prolongation of the Q-T interval.

EPITHELIOID SARCOMA

Tereshchenko O. – the 3–rd year student
Supervisors: Prof. I.Y. Makarov, E.A. Volosenkova

Epithelioid sarcomas are rare, mesenchymal tumors of unknown histogenesis with multidirectional differentiation, which is predominantly epithelial. They have no normal cellular analog and differ from both synovial sarcoma and carcinoma. They account for less than 1% of all soft tissue sarcomas and usually grow slowly, with peak incidence in young adult men and occur predominantly in extremities. Clinically, they have a high recurrence rate, and up to 50% of epithelioid sarcomas metastasize.

PATHOLOGICAL EFFECT OF METHYLMERCURY ON THE NERVOUS SYSTEM

Kiselev M. - the 3-rd year student
Supervisors: N.R. Levchenko, E.A. Volosenkova

Methylmercury has caused several major poisonings, for example in Minamata. The toxin is formed from mercury by microbes in nature. The substance accumulates in every link in the food chain. 95% of methylmercury is actively absorbed, forms a complex with cysteine, and accumulates well in the brain of fetuses and adults. The mechanism of action is not fully understood, but mainly the interaction with sulfhydryl groups of proteins is isolated, which damages EPS and enzymes. The severity of the poisoning depends on the concentration of the toxin, but usually manifests itself as headache, problems with memory, sensory system and coordination of movements, paralysis and death. Apoptosis and necrosis were observed during dissection in many stellate and basket cells of the cerebellum, as well as in layers 2, 3, 4 of neurons in the cerebral cortex and secondary degeneration in the pyramidal tract. In the spinal cord, secondary degeneration of the posterior columns was more pronounced than that of the anterior columns. Sensory nerve fibers had demyelination and abnormal regeneration.

INFARCTION

Solovyova T. – the 3rd year student
Supervisors: E.E Abramkin, E.A. Volosenkova

Infarction (from Lat. Infarcire - stuffing) - vascular necrosis is a consequence and extreme expression of ischemia.

Infarctions of brain, lungs, reins, spleen, intestines and heart attack have the most clinical importance.

The causes of infarction are prolonged spasm, thrombosis or embolism of the artery, functional tension of the organ in conditions of insufficient blood supply.

A favorable outcome of infarction is autolysis followed by complete regeneration, organization and formation of a scar. The organization of a hemorrhagic infarction can result in petrification or hemosiderosis. A cyst forms at the site of a heart attack, developing as a colliquative necrosis, for example, in the brain. The unfavorable outcome of a heart attack is its purulent fusion, which is usually associated with thrombobacterial embolism in sepsis.

THE TONES OF NIKOLAI SERGEEVICH KOROTKOV, CARRIED THROUGH THE YEARS

Kikot A. - the 4-th year student
Supervisors: Cand. Med. Sc. M.V. Sulima, E.A. Volosenkova

For many decades, Nikolai Sergeevich Korotkov remained a practically unknown doctor for his compatriots, and only in textbooks on physiology the name of the author of the sound method for determining blood pressure was mentioned.

With the help of a phonendoscope, he listened to the sound scale over the peripheral arteries when they were compressed. When the Riva-Rocci cuff is applied to the shoulder and the pressure in it is raised until the pulse on the radial artery disappears, sounds in the distal segment of the brachial artery are not heard, when the pressure in the cuff decreases, tones (systolic pressure) appear, the intensity of which decreases and completely disappears (diastolic pressure). This is the method (Riva-Rocci-Korotkova), which is still the basis for determining blood pressure.

His name was given to the hospital in Kursk, where he was born. In 2007, the passage in the Vyborg district of St. Petersburg was named Doctor Korotkov Street.

He died on March 14, 1920 and was buried at the Theological cemetery. The exact burial place of N.S. Korotkov has not been established. In 2011, at the site of the Military Medical Academy of St. Petersburg, a cenotaph was erected as a symbolic grave to the remarkable doctor, scientist Korotkov N.S.

UMBILICAL CORD ABNORMALITIES COMPLICATING PREGNANCY

Kikot A. – the 4-th year student
Supervisors: I.N. Salko, E.A. Volosenkova

Anomalies of the umbilical cord are a group of conditions in which an abnormal structure or location of this structure is observed, there are nodes, entanglement, tumors, cysts. At the same time, obvious signs of acute or chronic fetal hypoxia are noticeable: impaired motor activity, increased or slowed heart rate.

To identify umbilical cord abnormalities, ultrasound, cardiotocography, Doppler, postnatal examination of the placenta are used. Treatment depends on the type of umbilical cord anomaly, and consists in hospitalization of the pregnant woman and monitoring the condition of the woman and the fetus, or involves an emergency delivery by cesarean section.

DAMAGE TO THE NERVOUS SYSTEM IN COVID-19

Kikot A. – the 4-th year student
Supervisors: Cand. Med. Sc. D. Yu. Kon'kova, E.A. Volosenkova

Until recently, the question of whether the SARS-CoV-2 virus infects the structures of the nervous system remained open. Since the beginning of the COVID-19 pandemic, patients have had individual neurological symptoms, and since the beginning of April, reports of the first confirmed cases of damage to the central nervous system and peripheral nerves have begun to appear in foreign sources.

Forms of lesions of the central nervous system: acute encephalitis / meningoencephalitis, acute hemorrhagic encephalitis / necrotizing encephalopathy, cerebrovascular complications, encephalopathy, impairment of smell and taste.

It is possible that the development of respiratory failure accompanying a new coronavirus infection is associated with the involvement of not only the lower respiratory tract in the pathological process, but also the respiratory center in the brain stem.

The neuroinvasive potential of COVID-19 is being studied on the example of coronaviruses close to it in structure. To invade cells, COVID-19 uses type 2 angiotensin-converting enzyme (ACE2) as a receptor that is found on the surface of neurons and glial cells in the brain. The interaction of the coronavirus with these receptors can lead to direct damage of neurons without the development of inflammation.

Particular attention is paid to immune mechanisms, the possibility of autoimmune effects is not excluded. The development of a cytokine storm during coronavirus infection increases the permeability of the blood-brain barrier, making it possible for viruses, bacteria, immune cells, toxic metabolites and inflammatory agents to enter the CNS structures without control. The impact of these factors on the brain tissue and its membranes can lead to the development of neurological symptoms without direct penetration of SARS-CoV2, but these conditions can still be considered associated with this infection.

OVERVIEW OF COVID-19 VACCINE TECHNOLOGY

Maluga M. – the 2-nd year student
Supervisors: Cand. Tech. Sc. Yu. I. Derzhapolskaya, E.A. Volosenkova

The pandemic caused by the SARS-CoV-2 virus has been called the COVID-19 pandemic. Nevertheless, the main problems that people have been experiencing since the discovery of this unpleasant virus in all respects fell not in 2019, but in 2020. The disease does not subside, people continue to get infected and get sick, so scientists from all countries are accelerating the search for a solution to treat and protect humanity from the insidious SARS-CoV-2. Biotech companies and pharmaceutical companies around the world found an opportunistic market in this situation and rushed to develop vaccines.

The 6 main technical trends observed here are protein-based, RBD-based, mRNA-based, VLP-based and live attenuated and inactivated viral vaccines.

Summing up, one can say that the vaccines being developed all over the world are not completely successful. The mutations and new mutations of COVID-19 are a serious obstacle to a permanent solution to this catastrophic pandemic. Much more detailed and careful vaccine studies and developments are necessary.

SPECIFIC PREVENTION OF CORONAVIRUS INFECTION, COVID-19

Makitryuk D., Balabanova D. - the 5th year students
Supervisor: Cand. Med. Sc. A.V. Zotova

General preventive measures against acute respiratory viral infections, including a new coronavirus infection COVID-19, are known to almost everybody. Leaflets and information about them can be seen in all medical institutions. Specific prevention is the immunization of various groups of the population. Immunization is the process by which a person acquires immunity, or becomes immune to an infectious disease, usually by administering a vaccine. The goals of this type of prevention: to prevent, limit the spread and eliminate infectious diseases, to protect individuals who are vaccinated, and to create population immunity. Prevention of new coronavirus infection through immunization of population groups began at the beginning of December 2020. In our country at the moment only domestic drugs are used. To date, at least three domestic vaccines are known: Gam-Covid-Vac (Sputnik V), EpiVacCorona, CoviVac. Issues of safety and efficacy of vaccines are actively studied all over the world. Foreign types of vaccines are also known, they include: Pfizer/BioNTech and Moderna are used today for vaccination in Great Britain, Israel, European Union countries, Ukraine, USA and other states, AstraZeneca - it is made on the principle of Sputnik V drug. It is supposed that if a large number of people are covered by vaccination, as well as in view of already infected persons, the epidemic should go down. This paper reviews the main types of vaccines against the new coronavirus infection COVID-19, their differences from each other, and discusses the results of recent data on their use in clinical practice.

LACK OF BRONCHIAL ASTHMA CONTROL IN PREGNANT WOMEN AS A PREDICTOR OF PERINATAL COMPLICATIONS

Gulyaev A. – the 5-th year student
Supervisors: Doc. Med. Sc. Prihodko O.B., Cand. Med. Sc. Kostrova I.V.

Bronchial asthma (BA) is the most common chronic disease in pregnant women, and its prevalence is steadily increasing worldwide. Lack of disease control in this category of patients is a serious background pathology that requires further study.The aim of the study was to determine the

effect of uncontrolled BA on the development of complications of pregnancy, childbirth and the condition of the fetus and newborn.

Among pregnant women, the following groups were distinguished: with controlled BA (group I, 85 patients), with partially controlled BA (group II, 78 patients), with uncontrolled BA (group III, 90 patients), a comparison group - 30 pregnant women without bronchopulmonary pathology (group IV)

In BA patients with impaired ventilation function of the lungs, according to spirometry and peak flowmetry, the incidence of pregnancy complications was increased. Compared with group I such diseases as gestosis (1.9 times), chronic placental insufficiency (1.7 times), chronic intrauterine fetal hypoxia (1.5 times), infection of the amniotic cavity and membranes (1.4 times) were more often developed, which indicated a deterioration in conditions for intrauterine development of the fetus in the presence of ventilation disorders in pregnant women and the absence of disease control.

At the same time, in group III, newborns with an Apgar score below 6 points were observed 2.3 times more often than in groups I-II ($p < 0.05$). Children from mothers of groups II-III more often ($p<0.001$) had cerebral ischemia, intrauterine growth retardation syndrome (IGRP) ($p<0.01$), grade II-III malnutrition, posthypoxic cardiopathy, respiratory distress syndrome (SDS) ($p<0.05$), toxic erythema. These pathological conditions adversely affected the further development of children, leading to increased morbidity during the neonatal period. In direct proportion to the degree of ventilation disorders, the incidence of disharmonious development of the fetus and newborn increased ($p<0.001$) due to a decrease in mass and growth parameters. The uncontrolled course of asthma led to a significant increase in such serious diseases as cerebral ischemia, SDR, and MRP, which negatively affect not only the development of the fetus and newborn, but also the health of children in subsequent periods.

TOUCHING THE PROBLEM - WITH THE HOPE OF DEFEATING THE VIRUS

Martynov S. – the 1st year student
Supervisors: Prof. E. N. Gordienko

Entering medical school coincided with a very difficult period in human history - the COVID-19 pandemic. Studying fundamental disciplines and working with scientific information helped to form an understanding of this dangerous "infectious weapon". Coronavirus infection (COVID-19) is an acute viral disease affecting all vital organs. Among many aspects and problems of its study are several:

- Epidemiology: SARS-CoV-2 has a huge negative impact on people all over the world, Russia, the Amur region and our neighbor China. In our country there are 9,145,912 + 36,818 infected, where the number + shows the progression of the disease per day.
- Infection mode: The coronavirus is sprayed by an infected person with saliva containing the pathogen. The minimum spraying distance is 2 meters, the aerosol settles on nearby objects after one hour. Survival of the virus remains a problem: retention time of COVID-19 on surfaces up to 9 days, depending on the object, e.g. on clothing up to 12 hours and on plastic 6-9 days.
- Contagiousness of the pathogen: An international team of scientists has discovered that SARS-CoV-2 infects cells in the mouth with the key protein angiotensin converting enzyme 2 (ACE 2), which allows the virus to penetrate cells in the body, especially the epithelium of the salivary glands of the mouth. It is here that ideal conditions are created for the expression of RNA even in a small proportion of the cells of the oral epithelium, the gums. The oral cavity is thus particularly vulnerable to the virus, hence the frightening figures on the spread of infection.

- Prevention: SARS-CoV-2 is an enveloped virus. Its lipid bilayer is quite sensitive to drying out, high temperatures and disinfectants, making such viruses easier to sterilize and necessitating all preventive measures.
- Epidemiological features: The virus has no seasonality like influenza, but there are waves of virulence activation and mutation resulting in new strains! Outbreaks are associated with its high contagiousness, also due to population migration.

Touching the problem for the future doctor plays a major role in education, orienting him towards a serious study of the relationship of the human organism, populations with infections and invasions - parasitism.

VARIANTS OF THE MITRAL VALVE STRUCTURE AND THEIR SIGNIFICANCE IN CARDIOLOGY

Komarova E. – the 2nd year student
Supervisors: Cand. Med. Sc. Assoc. Prof. Seliverstov S.S.

The mitral (bicuspid) valve is the left atrioventricular valve, oval-shaped, open downward, leftward, and forward. Its longitudinal size is 23-37 mm, and its transverse size is 17-33 mm. The valve area in a newborn is 1.18-1.49 cm2, in an adult it is 4-6 cm. The structure of the mitral valve is presented in the form of cusps, tendon chords, papillary muscles and annulus fibrosus of the valve. The normal operation of the mitral valve depends on the condition and function of each of the named departments.

In most cases, the mitral valve consists of anterior and posterior cusps. The number of additional leaflets depends on the size of the fibrous ring of the mitral valve - the wider the fibrous ring, the more additional leaflets. Additional valves are smaller and thinner, their commissures are smaller than similar structures of the main valves. The main valves are connected with similar papillary muscles with the help of chords of the free edge and rough zone. The shape of the papillary muscles is varied. The basal chords provide a connection between the cusps and the wall of the left ventricle. The fibrous ring of the mitral valve consists of two branches - anterior and posterior. The thickness of the anterior branch in a healthy adult is from 0.3 to 1 mm, the width is 0.5-1.5 mm, the thickness and width of the posterior branch are 0.3-0.8 mm and 0.5-1.2 mm respectively. Healthy people have significant individual differences in the structure of the heart. In addition to the classical options for the structure of the heart valve apparatus, there are options with a changed number of valve cusps and flaps, as well as papillary muscles. Due to the widespread use of transthoracic and transesophageal echocardiography, it became possible to diagnose variants and anomalies in the development of the valvular apparatus of the heart, which were previously diagnosed intraoperatively or postmortem.

ENERGY SUPPLY OF MUSCLE CONTRACTION

Ilyin K.N. – the 2nd year student
Supervisors: N.A. Feoktistova

ATP is a direct source of chemical energy for muscle contraction. However, the reserves of ATP in myocytes are small and are consumed within 1–2 seconds, at which time reserve sources of ATP are activated: creatine kinase and adenylate kinase reactions using creatine phosphate and ADP. The spent ATP must be constantly renewed. There are three main ways to restore ATP reserves: 1) dephosphorylation of creatine phosphate; 2) anaerobic glycolysis; 3) aerobic oxidation of glucose and fatty acids.

Anaerobic processes have a large reserve of substrates. Muscle glycogen (up to 2% of muscle mass) and blood glucose obtained from liver glycogen are used. Disadvantages: 1) low efficiency: 3

ATP per one glucose glycogen residue. 2) the accumulation of under-oxidized products (lactate). 3) glycolysis does not start immediately - only 10-15 seconds after the start of muscle work.

Aerobic recovery of ATP stores from glucose or fatty acids is required for prolonged exercise. Cardiac output and total pulmonary ventilation must be increased to meet the increased metabolic demands of the muscle. The heart rate then becomes constant.

Benefits of oxidative phosphorylation: 1) most

energetically favorable process (30 ATP molecules are synthesized during the oxidation of 1 glucose molecule), 2) the largest reserve of substrates: glucose, glycogen, glycerol, ketone bodies can be used, 3) decomposition products (CO2 and H2O) are practically harmless. But it requires increased amounts of oxygen. Branched-chain amino acids (Leu, Ile, Val) are also actively degraded in the muscles. During fasting, muscle proteins serve as the body's reserve. However, this process is not beneficial and hazardous to health. For this reason, the catabolism of muscle proteins is normally minimal and increases with prolonged fasting and some diseases.

The creatine phosphokinase reaction is the fastest way of ATP resynthesis. It is most effective, since it does not require the presence of oxygen, does not produce unwanted products, and turns on instantly. But the substrate supply is only enough for 20 seconds of work.

The myokinase reaction occurs only in muscle tissue. 2 ADP-> ATP + AMP. The reaction is catalyzed by myokinase (adenylate kinase). The main significance of this reaction is the formation of AMP - a powerful allosteric activator of key enzymes of glycolysis, glycogenolysis, HBP pathway (hexose biphosphate pathway: glycolysis, glycogenolysis). Partially AMP is converted into IMP by deamination, shifting the myokinase reaction towards the formation of ATP.

HORMONES OF THE SMALL INTESTINE

Komarova E., Lepisheva A. - the 2nd year students
Supervisors: Feoktistova N.A.

In the gastrointestinal tract, a number of hormones are formed and secreted, stimulating the processes of food digestion. They include: gastrin, motilin, pancreatic polypeptide, enteroglucagon and others, about 12 hormones in total. There are no special endocrine glands in the gastrointestinal tract, and the cells that synthesize hormones are localized in its various parts. Most of the hormones in the gastrointestinal tract are presented in multiple molecular forms. In addition, their structure and, in some cases, functions overlap, which served as the basis for assigning many of them to two families: the gastrin family and the secretin family. As peptides, GIT hormones activate adenylate cyclase and generate cAMP production. In addition, they contain intracellular Ca2+. Particular attention should be paid to the hormones of the small intestine. These include cholecystokinin, secretin, vasoactive intestinal peptide, enterogastron, villikilin, enterocrinin, gastrin, enteroglucagon, gastroinhibitory peptide, motilin, PTT. More recent studies have shown that most intestinal peptides play the role of neurotransmitters and neuromodulators in the central and peripheral nervous system. Small intestine hormones stimulate the secretion of pancreatic substances, reduce and evacuate the contents of the gallbladder, stimulate the secretion of water and bicarbonate, the pancreas and bile ducts, inhibit gastric secretion and peristalsis, increase the secretion of insulin B cells into the blood for the formation of glucose.

ANALYSIS OF MODERN EXTINGUISHING MEANS

Komarova E., Lepisheva A. – the 2nd year students
Supervisors: Cand. Biol. Sc., Zaritskaya V.V.

In connection with the current situation of the occurrence of fires in various spheres of human activity, today the fire services are faced with serious tasks to reduce the number, scale and intensity of fires, as well as the development of new fire extinguishing means.According to experts, the most promising today are technologies for fire extinguishing with water mist and finely sprayed fire extinguishing gents.The RUPT - 1-0.4 knapsack fire extinguishing system has proven itself well. Knapsack installations have extremely high efficiency in extinguishing fires of all classes (A, B, E).Also in service with the fire services there are mobile fire extinguishing installations, such as: a fire tanker ATs-5.0-40 on the KamAZ-43114 chassis and a fire extinguishing installation based on the Ka-32 helicopter for extinguishing from the air.There are also promising high-power installations designed to extinguish especially large and catastrophic fires. But the best way to fight fires is to avoid them altogether. Fire prevention is ensured by the use of non-combustible and fire-resistant materials. The successful development of work on the creation of new highly effective technical fire extinguishing means based on domestic high technologies and their implementation will allow re-equipping the fire protection units of the Ministry of Emergency Situations of Russia with the latest technology, reduce the risk of occurrence and development of large fires, especially at potentially dangerous enterprises and facilities, and increase the fire protection of underground facilities. infrastructure and life support systems of cities and megalopolises.

LUNG CONSTRUCTION OPTIONS AND THEIR IMPORTANCE IN SURGERY

Ilin K. - the 2-nd year student
Supervisors: Cand. Med. Sc., Assoc. Prof. S.S. Seliverstov

Normal structure of the lungs: The lungs, pulmones (from the Greek. - pneumon), are located in the chest cavity, on the sides of the heart and large vessels, in pleural sacs, separated from each other by the mediastinum. The right lung is larger in volume than the left, at the same time it is somewhat shorter and wider than the left. Each lung has: apex, base, diaphragmatic, costal and mediastinal surfaces. Each lung is divided into lobes. The right lung has three lobes, and the left one has two. The internal structure of the lungs: if we consider from large - to small parts, then their largest parts are lobes, then in lobes - segments that consist of lobules and they, in turn, are formed by pulmonary acini.

Lung options:

1. Elongated narrow lungs: typical for asthenics. The costal angle of the chest is acute (less than 90 degrees). The diaphragm is low.

2. Broad short lungs: characteristic of hypersthenics. The costal angle is obtuse (more than 90 degrees). The diaphragm is high.

3. Lungs of medium size (normal): characteristic of the normosthenic. The rib angle is 90 degrees. Height of the right lung: in men - 27.1 cm; in women: 21.6 cm. The height of the left lung: in men - 29.8 cm, in women - 23 cm.

The need to isolate smaller anatomical surgical units - bronchopulmonary segments. The bronchopulmonary segment is usually understood to mean a part of the pulmonary lobe ventilated by a third-order bronchus branching off from the lobar bronchus. In order to promptly make the correct diagnosis and prescribe the appropriate treatment, a modern surgeon, a pulmonologist, needs knowledge of the variant lung anatomy in order to reduce the risk of medical error when making a diagnosis and avoid complications due to late treatment.

REGENERATION AND AGE CHANGES IN NERVOUS TISSUE

Komarova E., Lepisheva A. – the 2nd year students
Supervisors: Doc. Med. Sc. Prof. Krasavina N.P.

Nervous tissue is a tissue of ectodermal origin, which is a system of specialized structures that form the basis of the nervous system and create conditions for the implementation of its functions. In embryogenesis, the number of differentiated neurons is replenished by neuronal stem cells. Nervous tissue forms the nervous system, is part of the nerve nodes, spinal cord and brain. It consists of nerve cells - neurons, bodies that have a stellate shape, long and fiber processes. Neurons perceive irritation and transmit excitation to muscles, skin, other tissues, and organs. Nervous tissue ensures the coordinated work of the body. Physiological verification of the body of neurons is carried out according to the mechanism of intracellular verification. Nerve cells of the autonomic nervous system are restored after organ hyperplasia. Process regeneration occurs along the course and growth of branching when oligodendrocytes appear. An essential control of the nervous tissue is the transformation and establishment of new interneuronal connections. A certain contribution to the study of nervous tissue includes specific humoral factors produced by certain cells of the endocrine glands and the nervous tissue itself. At the site of the defect in the nervous tissue, neuroglia grows. Process consideration efficiency in many bypass decisions. The general condition of the body is important. The development of the nervous system does not stop from the moment of birth. As the body ages, the nervous system also undergoes changes. In particular, we are talking about damage to nerve cells and damage to the human brain and spinal cord. In older people, amyloid begins to accumulate in the cells. An excessive amount of proteins producing amyloidosis, characterized by a violation of protein metabolism. After 60 years, the destruction of the myelin esophagus begins. This process occurred suddenly on the reflectivity of a person and his body's response to the subjects of the brain impulses. Disrupt the correct course of age-related changes susceptible to any infection that can manifest itself in a person to dementia and dementia in old age.

ACCIDENTS IN EVERYDAY LIFE

Ilin K.– the 2-nd year student
Supervisors: Cand. Biol. Sc., Assoc. Prof. V.V. Zaritsky

According to several sources, most of household incidents are due to the fatal outcome: 1- random drops; 2- poison; 3- lesion by electricity; 4-fires. Insurminals associated with falls, in most cases are not deadly. About 424,000 deadly falls occur annually. Risk factors include: 1- work at high altitude; 2- consumption of alcohol, and other substances; 3- neurological, heart violations; 4- Elderly age; 5- Low mobility.

Electric current lesion occurs when contact with an electrical chain, in which there are current sources that can cause it to flow through the body part that fell under the voltage. In Russia, the indicator of electric exchangerism is 8.8 deadly electricians per 1 million inhabitants in the country per year. Over the previous decade, almost half (49%) accidents associated with electric evils have led to a fatal outcome, and another quarter (25%) - to serious consequences. In recent years, there has been a decrease in the number of those who died as a result of electricians.

Fire is an uncontrolled burning, causing material damage and harm to human health. Frequent reasons: 1-careless handling of smoking and cooking. 2- Conducting electrode work during repair in apartments. 3-children's prank with fire. Statistics emergence in Russia for the period from 2014 - 2019 indicates the following: in 2014 there were 150.804; In 2015 - 145.942; In 2016 - 139.475; In 2017, 132.844 fire; In 2018 - 131.840 fire. As can be seen from the above statistics, the number of fires in Russia has decreased in 5 years. It is due to the measures taken to prevent fires.

Household accidents are accidents that have occurred in everyday life (at home) or when they are in the enterprise outside of working time. After analyzing statistical data on accidents under various conditions, it is possible to identify that annually about 9,000 people become victims of accidents in their own home. It is known that domestic injuries in men occur 3-4 times more often than in women, and in persons of 18-25 years old, they arise 4-5 times more often than those of 45-50 years.

Poisoning is the painful state of the body caused by a poisonous substance in the human body. In everyday life, the poisoning is most often occurring in the use of poor-quality food, medical drugs, the use of household chemicals and fertilizers, careless handling of devices containing mercury. Analysis of data on the number of poisoning per 100,000 people has shown that since 2014 there has been a decrease in cases of poisoning. And often his reason was alcohol-containing products.

Thus, accidents in everyday life become very frequent, and this is due to negligence. It is impossible to underestimate the danger in everyday life. It is necessary to carefully treat safety rules at home, because some injuries and wounds can have very serious consequences.

LIVER HISTOLOGICAL PICTURE IN HEPATITIS

Ilin K. - the 2-nd year student
Supervisors: Doc. Med. Sc., Prof. Krasavina N.P.

The liver is the largest gland in the digestive tract. It performs many important functions: it participates in digestion and metabolism, defatting many metabolic products, inactivating hormones of biogenic amines, industrial chemicals, toxic substances, metabolic products, bacteria. Carries out protective reactions of the body against microbes and foreign substances. Glycogen is formed in the liver, blood plasma proteins are synthesized, bile is formed, which is necessary for the absorption of fats in the intestine, the exchange of cholesterol, and the accumulation of essential vitamins. It also metabolizes lipids, carries out storage and barrier functions. The liver is an organ of hematopoiesis.

The parenchyma in the embryogenesis of the organ is built from cells of the glandular epithelium, forming the hepatic tracts and plates, of which the liver lobules consist. The hepatic cells surrounding the sinusoids have a large number of cytoplasmic micro outgrowths. The cells are spaced from the surface of the capillary endothelium at a certain distance, therefore, a Disse space is formed between them. The diameter of the hepatic cells is 18-40 microns. Their cytoplasm contains a large number of organelles, especially mitochondria. There is a well-developed smooth and rough endoplasmic reticulum. The lamellar complex is located between the cell nucleus and the plasmolemma facing the bile capillary.

Hepatitis is a liver disease with a predominance of signs of inflammation in the form of alteration (dystrophy and necrosis) of the hepatic parenchyma, inflammatory infiltration, predominantly of the stroma.

VIRAL HEPATITIS: Etiological forms - A, B, C, D, E, F, G. Clinical and morphological forms - Acute: - anicteric; - cyclic (icteric); - necrotic; - cholestatic alterative changes: the predominance of protein parenchymal dystrophy and colliquation necrosis (with hepatitis C - a combination with fatty degeneration, with hepatitis B and C - coagulation necrosis). Granular degeneration of hepatocytes, hydropic dystrophy (Hepatitis C), hyaline droplet dystrophy (balloon) (Hepatitis B). Pathomorphology of alterative changes in viral hepatitis. Types of necrosis: 1. Small focal 2. Large focal - a). Intralobular; Inflammatory infiltration from lymphocytes and macrophages (productive inflammation) - immune cytolysis of hepatocytes. Hepatitis A and E are inherent in the fecal-oral mechanism of infection - through water, food, as a result of household contacts. For hepatitis B, C, D and G, transmission is characteristic through damaged skin, mucous membranes with infected

blood. About 45% of the world's population lives in regions highly endemic for HBV infection, where the HBV surface antigen (HBsAg) is determined in> 8% of the population, 43% in moderately endemic and 12% in low endemic regions (HBsAg is determined in 0 , 6-2%). Regions with a moderate prevalence include Eastern and Southern Europe, as well as the Russian Federation, with a low - Northern and Western Europe.

HEREDITARY NON-POLYPOUS COLON CANCER (LYNCH SYNDROME)

Kucherenko A. - the 3rd year student
Supervisors: Prof. Menshchikova N.V.

Hereditary non-polypous colon cancer (Lynch syndrome) is a disease with an autosomal dominant type of inheritance, in which the risk of malignant tumors of the colon increases significantly. Its development is due to the presence of germinogenic mutations in one of the DNA repair genes (MLH1, MSH2 (90% of mutations in families), MSH6(7-10%), PMS1, PMS2 (5%)). Currently, this is one of the most common oncological diseases. Despite the constant improvement of diagnostic and treatment methods, the morbidity and mortality of the population continue to grow steadily. Cases of the disease account for 3-5% of all colorectal cancer. In all cases, hereditary non-polypous colon cancer (Lynch syndrome) occurs at the age of 24 to 50 years. Amsterdam Criteria II are used to diagnose this syndrome. Macroscopic examination: a limited number of polyps, mainly in the right parts (i.e. proximal to the splenic bend). Despite the "non-polypous" nature, cancer develops from polypoid precursors, but unlike familial adenomatosis of the colon, the number of polyps is much smaller. Microscopic examination: usually poorly differentiated adenocarcinoma with medullary growth, cricoid and mucosal structure.

ADENOMA OF THE PITUITARY GLAND

Semka A. – the 3rd year student
Supervisor: Abramkin E.E.

Pituitary adenoma is a benign monoclonal neoplasm that occurs during the transformation of the cells of the anterior pituitary gland and is characterized by a small lesion zone, slow growth and the absence of secondary foci. After gliomas and meningiomas, pituitary adenomas occupy the third place in terms of incidence among all intracranial tumors.

Tumors of the pituitary gland form from any adenohypophyseal cell. Adenomas of the pituitary gland, which proceed without clinical manifestations, hypersecretion of pituitary hormones, are called "inactive" adenomas, an increase in which leads to a decrease in the function of the pituitary gland - hypopituitarism. If the amount of any hormone is much higher than normal values, then the corresponding clinical syndrome develops.

According to the histological criterion, they are divided into: prolactinomas, somatotropinomas, thyrotropinomas; adenocorticotropinomas, gonadotropin-producing, plurigormonal. In terms of size, pituitary adenomas can be microadenomas (their size does not exceed 10 mm) or macroadenomas (more than 10 mm). At an early stage, pituitary adenomas begin to develop in the cavity of the sella turcica. The direction of growth of the pituitary adenoma can be different (up, down, sideways) - then the tumor is called supra / endo / infra / laterosellar. Morphologically distinguish between chromophobic, eosinophilic and basophilic adenoma.

A feature of pituitary adenomas is that they are most often observed in young people of working age and often lead to disability of patients. The clinical picture of pituitary adenomas consists of three main groups of symptoms of neurological disorders, endocrinological and neuro-

ophthalmological symptoms. Isolated cells of clinically non-functioning pituitary tumors are capable of releasing a small amount of several hormones into the environment.

NEW CORONAVIRUS INFECTION IN THE UK

Laguta R. - the 2nd year student
Supervisors: Cand. Biol Sc., Assoc. Prof. Guba L.A.

Great Britain is one of the most developed and richest countries not only in Europe, but in the whole world. However, despite this, the United Kingdom is the country with the highest number of cases of coronavirus infection in Europe. The first case appeared on January 31, 2020 in England, that is, 19 days after the discovery of a new coronavirus infection in the Chinese city of Wuhan. By March 1, the disease had spread to Scotland, Ireland and Wales. Over the past two years, the number of cases has been growing. However, there was a place to be an insignificant decline in the growth of patients. The smallest increase was observed from January to March 2020. The peak incidence has not yet come, but now you can observe the largest increase in cases for the entire time of infection, and perhaps this is not the limit. Although this trend is observed in almost all states. In 2020, the number of cases was 2 542 065 people, and 74 125 people died.

At the time of November 17, 2021, the number of cases from January 31, 2020 to November 2021 is 9,487,302, and the number of deaths is 143,159.

Despite the increased number of cases, the situation is better than it could be. The UK is the first to approve the use of the Pfizer vaccine. Since then, 50,614,550 people have been vaccinated, accounting for 74% of the total population of the United Kingdom.

STATISTICS OF PLANE CRASHES IN THE WORLD

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Supervisors: Cand. Biol Sc., Assoc. Prof. Guba L.A. Assoc.Prof., I.A. Bibik, Cand.Ped.Sc.

Plane crashes are very actual topic at the moment, because hundreds of people die in plane crashes every year. There are examples of some of the largest plane crashes in our report. Ranking of countries by plane crashes for the period from 2014 to 2020:

Russia (43).
The United States (18).
Ukraine (8).
Congo (7).
Germany (4).

In just six years, Russia has risen to 1st place in the ranking of countries with the highest number of aircraft accidents. Whereas until recently, America was the leader of the anti-rating.

3. The most mysterious air tragedy remains the disappearance of the Malaysian Airlines plane on March 8 of this year. Flight Kuala Lumpur - Beijing. The Boeing 777-200, flying over the South China Sea, suddenly disappeared from the dispatchers' radars. Subsequently, it was found that communication was disconnected in the plane, and the liner itself deviated from the course and was in the air for about seven hours after the "loss". The plane was never found, and now it is assumed that it crashed in the southern Indian Ocean. There were 239 people on board. Until today, this disaster was considered the largest in 10 years.

4. The causes of plane crashes can be various , for example:

Pilot errors
Errors of ground services
Problems with technology

Actions from outside
Weather conditions
5. Rules of conduct in a plane crash:
1. Assess the situation
2. Prepare your place for as long as possible
3. Lean against the front seat
4. Try to stay calm
5. If you fall into the water, put on a life jacket, but do not inflate it
6. Before helping others, put on an oxygen mask
7. While moving, try to bend down to be below the smoke level.

CREATION OF LIGAND-MODIFIERS FOR THE TRPM8 RECEPTOR, TESTING OF THEIR AFFINITY BY HARD AND FLEXIBLE DOCKING METHODS

Timofeev E.A., Timkin P.D., Borodin E.A.

In this work, an attempt was made to create modifiers for the TRPM8 receptor, which will be more effective than the original substances. In total, 9 substances were selected and modified (AMG-333б, AMTB, Borneol, Cannabidivarin, Cubedol, Eucaliptol, Riluzole, Riparin, Rotundifolone). Subsequently, their affinity and stability were checked using hard docking (AutoDock software) and flexible docking (Galaxy7TM software) .

Key words: bioinformatics, hard docking, flexible docking, modifiers.

AFLATOXINS

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Supervisors: Candidate of Medical Sciences, senior teacher Bubinets Olga Vladimirovna

Aflatoxins pose a serious health risk to humans and livestock Aflatoxins are poisonous substances produced by certain kinds of fungi (moulds) that are found naturally all over the world; they can contaminate food crops and pose a serious health threat to humans and livestock. Aflatoxins also pose a significant economic burden, causing an estimated 25% or more of the world's food crops to be destroyed annually.

Most human exposure comes from nuts and grains. Two closely related species of fungi are mainly responsible for producing the aflatoxins of public health significance: Aspergillus flavus and A. parasiticus. Under favourable conditions typically found in tropical and subtropical regions, including high temperatures and high humidity, these moulds, normally found on dead and decaying vegetation, can invade food crops.

Several types of aflatoxin (14 or more) occur in nature, but four – aflatoxins B1 , B2 , G1 and G2 are particularly dangerous to humans and animals as they have been found in all major food crops; but most human exposure comes from contaminated nuts, grains and their derived products. Additionally, aflatoxin M1 (AFM1), a product of aflatoxin B1 (AFB1) metabolism, can be found in milk in areas of high aflatoxin exposure. Subsequently humans may be exposed to this aflatoxin through milk and milk products, including breast milk, especially in areas where the poorest quality grain is used for animal feed.

Long-term exposure can have serious health consequences. Long-term or chronic exposure to aflatoxins has several health consequences including: * aflatoxins are potent carcinogens and may affect all organ systems, especially the liver and kidneys; they cause liver cancer, and have been linked to other types of cancer – AFB1 is known to be carcinogenic in humans; the potency of aflatoxin to cause liver cancer is significantly enhanced in the presence of infection with hepatitis B

virus (HBV); * aflatoxins are mutagenic in bacteria (affect the DNA), genotoxic, and have the potential to cause birth defects in children; * children may become stunted, although these data have yet to be confirmed because other factors also contribute to growth faltering e.g. low socioeconomic status, chronic diarrhoea, infectious diseases, malnutrition; * aflatoxins cause immunosuppression, therefore may decrease resistance to infectious agents (e.g. HIV, tuberculosis); Acute poisoning can be life threatening Large doses of aflatoxins lead to acute poisoning (aflatoxicosis) that can be life threatening, usually through damage to the liver. Outbreaks of acute liver failure (jaundice, lethargy, nausea, death), identified as aflatoxicosis, have been observed in human populations since the 1960s. Most recently deaths attributed to aflatoxins were reported during the summer of 2016 in the United Republic of Tanzania. Adults are more tolerant to acute exposure than children. The consumption of food containing aflatoxin concentrations of 1 mg/kg or higher has been suspected to cause aflatoxicosis. Based on past outbreaks it has been estimated that, when consumed over a period of 1–3 weeks, an AFB1 dose of 20–120 μg/kg bw per day (μgram is one billionth [1×10−9] of a kilogram) is acutely toxic and potentially lethal.

Detecting aflatoxicosis in humans and animals is difficult.

Detecting aflatoxicosis in humans and animals is difficult due to variations in clinical signs and the presence of other factors such as suppression of the immune system caused by an infectious disease. Of the two techniques most often used to detect levels of aflatoxins in humans, one measures a breakdown product in urine (which however is only present for 24 hours after exposure), and the other measures the level of Aflatoxin contaminated nuts 3 an AFB–albumin compound in the blood serum, providing information on exposure over weeks or months. These biomarker measurements are important in investigating outbreaks where aflatoxin contamination is suspected.

MYOCARDIAL INFARCTION MARKERS

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Myocardial infarction is the most severe clinical form of coronary heart disease (CHD). Myocardial infarction is characterized by necrosis of a part of the heart muscle due to prolonged disturbance of blood flow (ischemia) in the myocardium. It most commonly develops in the left ventricle.

The need for early diagnosis of MI is due to the reduced risk of mortality. Thus, thrombolytic therapy in the first 2-6 hours reduces early mortality in patients by 30% on average, the therapy started after 7-12 hours - only by 13%, the therapy started after 13-24 hours - does not reduce mortality.

Markers of MI are enzymes and proteins contained in tissues, and the increase in their levels may result not only from myocardial damage. The main biochemical markers used to diagnose myocardial infarction are myoglobin, troponin I, troponin T, creatine phosphokinase and lactate dehydrogenase.

Myoglobin is an oxygen-binding protein of the transverse striated skeletal muscles and myocardium. It contains iron, is structurally similar to hemoglobin molecule and is responsible for the transport of 02 in skeletal muscles. After binding to the O2 molecule, oxymyoglobin is formed, from which the O2 molecule is detached during heart contraction. Under conditions of intact myocardium, myoglobin is not released into the bloodstream. When the heart muscle is damaged, myoglobin molecules enter the bloodstream. Therefore, myoglobin is one of the earliest markers of myocardial damage, as an increase in its level in the blood is determined as early as 2-4 hours after the onset of acute myocardial infarction. Its concentration peaks within 12 hours, and then within 1-2 days it decreases to normal. This marker alone is not sufficient for an accurate diagnosis of myocardial infarction.

Troponin is a regulatory globular protein consisting of three subunits that is involved in the process of muscle contraction. It is found in skeletal muscle and cardiac muscle. Troponin I and troponin T

are found only in cardiac muscle. Normally these cardiac-specific troponins are almost never found in the blood. When myocardial damage occurs, cardiac troponins I and T enter the bloodstream in large quantities. The amount of troponins entering the bloodstream directly depends on the extent of myocardial damage.

Troponin I is the most sensitive and specific for cardiac muscle damage. The molecular weight of cTn T is 37 kDa, cTn I is 23.8 kDa. If part of the heart muscle dies, troponin levels in the blood rise 3-4 hours after the injury and may remain elevated for 10-14 days.

Three hours after the infarction, myoglobin has the highest sensitivity (69%). After 6 hours the sensitivity of troponins increases more than 1.5-fold and by 12 hours all markers have a sensitivity of 100%. The highest level of troponins and the lowest level of myoglobin are observed. The study of marker levels is performed as a double test, determining the dynamics of changes in their concentration. First of all, the amount of myoglobin should be investigated, as it is the earliest, most sensitive biomarker of myocardial damage, as well as observation of changes in troponin concentration during the day. Increased concentration of troponins can also be observed in a number of other diseases, such as: diseases of the central nervous system, chronic renal failure, sepsis, lung and endocrine system diseases, HIV infection.

Creatine phosphokinase (creatine kinase) is an enzyme found in the myocardium and in skeletal muscles (small amounts are found in smooth muscles of the uterus, gastrointestinal tract and brain). The normal creatine kinase-MB content in the blood is considered to be 0-24 U/L. In men it is < 190 U/L, and in women < 167 U/L. In myocardial and skeletal muscle damage, there is a release of the enzyme from the cells, leading to an increase in the activity of the enzyme in the blood. Two to four hours after angina attack, the MB level in blood rises considerably, the peak of the increase in concentration being 24-48 h. Normalization of the index usually ends on the 3rd day. This rapid normalization allows the organism to use creatine kinase MB not only for the diagnosis of primary MI but also for the diagnosis of recurrent infarction. The sensitivity of creatine kinase MB in a single study is about 35%, and in repeated studies up to 95%, so that the diagnosis is repeated after 6-12 hours. The concentration of creatine kinase MB may remain normal during the first 4-8 hours even in the presence of a previous heart attack. Also, if creatine kinase MB is normal, troponin I may be elevated, which is considered as a microinfarction (prolonged slight myocardial damage). If both are elevated, an acute MI is diagnosed.

Lactate dehydrogenase (LDH) is a cytosolic protein with a molecular weight of 135 kDa. LDH has five isoenzymes. Cardiac muscle contains predominantly isoenzyme LDH-1. In MI, LDH concentration begins to exceed normal levels 14-48 h after the onset of symptoms, reaches a maximum value on the 3rd-6th day of the disease, and returns to normal levels on the 7th-14th day of the disease. LDH-1 was also found in erythrocytes, kidneys, brain, stomach; increased concentration of this protein in blood of patients is not always associated with myocardial necrosis. LDH-1/LDH-2 ratio exceeding 0.76 has 90% specificity in detecting myocardial necrosis. Due to the late increase in serum LDH concentration, this marker is not used for early diagnosis of MI and to judge the success of thrombolytic therapy, but LDH has long been used for the diagnosis of MI in the late stages of the disease.

AST and ALT are enzymes that catalyze the transfer of amino groups between amino acids (transaminases). They are found in many tissues and organs and therefore are not cardiac muscle-specific markers. MI is accompanied by an increase in blood concentrations of AST and ALT, which may be detected 6-12 hours after myocardial necrosis occurs. It peaks after 24-48 hours and is normalized on the 7^{th} day of the disease. Elevated AST levels are noted in 97-98% of patients with large-focal myocardial infarction. Currently AST and ALT are considered to be additional markers of

myocardial damage, but they are considerably inferior to cardiac troponins and MB creatine kinase in their informativity.
There is an increased number of leukocytes in blood, increased erythrocyte sedimentation rate (ESR), increased gamma globulin level, decreased albumin level, positive test for C-reactive protein. Leukocytosis is diagnosed in about 90% of patients, a few hours after the onset of a pain attack, reaching a maximum on the 2-4 day. And gradually in uncomplicated cases it is decreased to the normal level within a week.
Conclusion.
Thus, above are examples of the main markers of cardiomyocyte necrosis required for verification of ACS and confirmation of MI diagnosis.
The use of modern biochemical markers of myocardial necrosis allows us to identify patients with myocardial necrosis with high accuracy, to identify patients with ACS without persistent ST-segment elevation after ECT with high risk of adverse outcome and those who are most in need of active antithrombotic treatment and myocardial revascularization. This allows us to accelerate hospital discharge in low-risk patients and correctly allocate funds in secondary prevention of complications. Widespread introduction of modern biomarkers of myocardial necrosis into clinical practice can not only reduce the number of adverse outcomes of CHD, but also it really reduces the cost of treatment.

MONITORING OF ACUTE INTESTINAL INFECTIONS IN A MULTIDISCIPLINE HOSPITAL

Alatartseva S. P. – the 3rd year student
Supervisors: Bubinets O. V. - senior lecturer, Ph.D.
Acute intestinal infections (AEI), according to WHO terminology - diarrheal diseases, combine more than 30 diseases of bacterial, viral or protozoal etiology, the main symptom of which is acute diarrhea. The results of many studies show that, despite the implementation of a set of measures, the "hospital environment", in which the causative agent of infection can persist for a long time, despite disinfection measures, and medical personnel, given the latent, sometimes quite intense course of the epidemic process and the observed bacterial carriage among employees, under certain conditions, they are able to resume the course of a chronic epidemic. According to foreign researchers, AEI pathogens are found in the hands of 76-78% of health workers working with children.
Monitoring in hospitals is carried out in a comprehensive manner by specialists of the Sanitary and Epidemiological Service (epidemiologists, sanitary doctors of food and communal hygiene, bacteriologists) with the leading role of a hospital epidemiologist. The system of surveillance for acute intestinal infections in hospitals includes: 1. Diagnostics, systematic recording and registration of infections (shigellosis, salmonellosis and other AEI), including cases of drifts and nosocomial diseases; 2. Control over the observance of the sanitary-hygienic and anti-epidemic regime using laboratory research methods; 3. Establishment of the etiological factor and its epidemiological markers in diseases and isolation of the pathogen from the external environment; 4. Analysis of morbidity in the hospital as a whole, among various departments and categories of patients and staff; 5. Identification of groups and risk factors for the disease and the spread of AEI, the ways of their transmission in hospitals; 6. Development of preventive and anti-epidemic measures; 7. Prevention of the transfer of infection outside the hospital (compliance with the rules of transfer and discharge of infected patients). Indicators characterizing the quality of anti-epidemic measures are the average time of detection of patients with AEI from the moment of admission (in the case of a skid) or from the day of the disease (in a nosocomial case); average terms of isolation of patients with intestinal infection (with drifts and nosocomial infection) from the moment of detection. It is advisable to use

these indicators for a comparative assessment of the epidemiological reliability of various departments (hospitals).

THE EFFECT OF PSYCHOTROPIC DRUGS ON THE CEREBRAL CORTEX

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Amoborbital

A sleeping pill derived from barbituric acid. Suppresses the sensory zone of the cerebral cortex, reduces motor activity, changes the functional activity of the brain state. Although the mechanism of action has not been definitively established, barbiturates appear to be particularly active at the level of the hypothalamus, where they suppress ascending conduction in the reticular formation, thereby preventing the transmission of impulses to the cerebral cortex. Like other barbiturates, it has an anticonvulsant effect in narcotic doses.

May cause respiratory depression, the degree of respiratory depression depends on the dose. Barbiturates promote the induction of microsomal liver enzymes, thereby enhancing or altering the metabolism of other drugs.

Ketamine

A means for non-inhalation anesthesia. Ketamine causes dissociative anesthesia - a condition in which some parts of the brain are excited and others are depressed, which explains the manifestation of analgesic effect with incomplete depression of consciousness and preservation of spontaneous breathing, pharyngeal, laryngeal and cough reflexes (the dose of ketamine that causes apnea is 8 times higher than hypnotic). The surgical stage of general anesthesia does not develop when using ketamine (the visceral analgesic activity of ketamine is insufficient, which should be taken into account during abdominal operations).

Causes a specific set of symptoms: somatic analgesia, a condition resembling neuroleptanalgesia, increases blood pressure, myocardial contractility, minute blood volume and myocardial oxygen demand, relaxes the smooth muscles of the bronchi. Practically does not reduce the tone of skeletal muscles, can cause involuntary muscle twitching.

In adults, the minimum dose that causes a hypnotic effect with a single intravenous injection is 0.5 mg / kg of body weight (depression of consciousness lasts 1.5 minutes). At a dose of 1 mg / kg, it depresses consciousness for 6 minutes, at a dose of 1.5 mg / kg - for 9 minutes, at a dose of 2 mg / kg - for 10-15 minutes. With an intravenous injection of 4-8 mg / kg, the effect occurs after 2-4 minutes (6-8 minutes) and lasts an average of 12-25 minutes (up to 30-40 minutes). In children with intravenous administration, general anesthesia occurs after 2-6 minutes, with intravenous administration - after 15-60 seconds, the duration of action is 15-30 minutes and 5-15 minutes, respectively.

The analgesic effect of ketamine in somatic pain is manifested when prescribing sub-narcotic doses. The maximum analgesic effect occurs 10 minutes after intravenous administration and persists for 2-3 hours, with intravenous administration, the effect is longer.

Benzylmorphine

Benzylmorphine (Peronin) is a semi-synthetic opioid drug entered the international market in 1896, and shortly thereafter the United States market. It is very similar to codeine, containing a benzyl group attached to a morphine molecule, just as the methyl group creates codeine, and the ethyl group creates ethylmorphine or dionine (used as a common name for this drug, as peronin for benzylmorphine). By weight, it is about 90% stronger than codeine.

EPIDEMIOLOGICAL SITUATION OF COVID-19 IN KAMCHATKA KRAI

D. Ryzhova - 2nd-year student
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During the period from 2020-2021, 19,801 people were infected in Kamchatka Krai. Of them only 15,589 people recovered. Also according to official data, the coronavirus caused the death of 351 people in the region. The number of vaccinated during this period was 88,703 people. There are now 3,861 people sick with the virus, which is 0.01% of all patients worldwide. In Kamchatka Krai the mortality rate is 1.2 times less than in all countries together, here the lethality rate is 1.77%

	Infections in total	The total number of deaths	Recovered in total	Vaccinated
2020	10102	82	8919	
2021	9699	269	6670	88703
Total	19 801	351	15 589	88703

VARIOUS TYPES OF DENTAL MALFORMATIONS

Kushnaryova V. – the 2nd-year student
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The tooth is an organ that has a characteristic shape and structure, occupies a certain position in the dentition. It is built of special tissues and has its own nervous apparatus, blood and lymphatic vessels. Like any organ, it can have various types of anomalies, the causes of which are violations of the laying of teeth in the prenatal period, various childhood diseases.

BITE ANOMALIES

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Bite is relationship of the teeth with maximal contact and full occlusion of the upper and lower jaw. There is a difference between a physiological and a pathological bite. A physiological bite ensures the proper functioning of the maxillary system: chewing, speaking and breathing clearly.
Bite Anomalies:

- Progenia (Overlap of the mandibular incisors with the incisors of the upper jaw),
- Prognathia (Forward tilting of the upper and lower teeth),
- Closed bite (The upper incisors sharply overlap the lower incisors),
- Open Bite (There is a gap between the upper and lower incisors),
- Crossbite (The front teeth close properly and the lower molars are on the outside of the upper teeth),

Unrepaired bite anomalies lead to jaw deformities, chewing and breathing problems, etc..

HISTOPHYSIOLOGY OF THE OPTIC NERVE

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The optic nerve (lat. Nervus opticus) is the second pair of cranial nerves through which visual stimuli perceived by the sensitive cells of the retina are transmitted to the brain. It starts from the

eyeball and ends in the chiasma. In the fundus of the eye, the doctor sees it in the shape of a yellow disc. The optic nerve consists of four divisions:

1. The intraocular (what is visible when examining the ocular fundus)

2. The ocular (behind the eye in the eye socket)

3. Intraocular (the exit of the optic nerve from the eye cavity and its passage through the optic canal)

4. Intracranial (behind the eye socket in the brain)

The total length of the optic nerve in an adult is 3.5-5.5 cm. A large part of the nerve is represented by the orbital segment (2.5-3 cm), which has an S-shaped bend in the horizontal plane. Due to this curvature we do not experience a sense of tension when the eyeballs move.

From the exit from the eyeball to the entrance to the optical canal, the optic nerve has 3 membranes: hard, spider-like, and soft. Together with them it is 4-4.5 mm thick, without them - 3-3.5 mm. The intracranial section of the nerve contains only the soft dura mater.

In the area of the chiasma, the optic nerve fibers partially cross over, after which they pass into the optic tracts. The optic tracts are 3-4 cm long. After the visual tracts information about the image goes to the optic rays, then under the influence of light in the photoreceptors there is a photochemical reaction (decay of visual pigments), which results in energy (electrical potential), carrying visual information and ending in the sensory visual center (occipital lobe of the brain).

Studying the histophysiology of the optic nerve is important because there are a number of ophthalmic diseases that result in damage to different parts of the visual pathway with the development of a clinical picture typical of the localization of damage. For example, in case of optic nerve damage at the level of the chiasma or optic ray, the lesion of the visual fields will be bilateral in nature due to the intersection of the right and left optic nerves in these areas.

Optic nerve damage may be caused by such diseases as glaucoma - damage to the eye which is characterized by increased intraocular pressure (over 21 mmHg while the norm is 16-21) that gives unusual tension to the eyeball. Retinal pigmentary dystrophy , neuritis, intoxication with alcohol surrogates, drugs, quinine.

Toxic neuritis belongs to the category of optic nerve pathology with damage to the mitochondria of the cells. In the initial stage, patients may complain of blurred vision. When poisoning with methanol or ethanol there is damage to the optic nerve, characterized by a sharp decrease in visual acuity, which can later develop into atrophy of the optic nerve with a persistent decrease in visual acuity, sometimes up to blindness, diseases of the brain (inflammation of the brain and cerebral membranes (meningitis, arachnoiditis)), multiple sclerosis.

Among the most relevant diseases of the optic nerve we can describe a process in which there is a destruction of all or separate fibers of the optic nerve, called optic atrophy.

Causes:

Mutant genes are sometimes passed on to offspring. Consequently, atrophy of the optic nerve is observed in children from birth. But more often this eye problem is a consequence of various pathological processes that occur during life.

Some of them are the following:

- Mechanical damage (such as ingestion of a foreign body in the eye socket)

-Autoimmune diseases (systemic lupus erythematosus)

- Infections (tuberculosis, toxoplasmosis)

-Other diseases (hypertension, diabetes mellitus)

Council of SNO of the Amur State Medical Academy.

GASTROINTESTINAL COMPLICATIONS IN PATIENTS WITH COVID-19

O. Lukasevich – 4th-year student
Supervisors: M.B. Sulima, Cand.Med.Sc., I.A.Bibik, Cand.Ped.Sc.

Recently, after the spread of Indian Delta strain, coronavirus patients are increasingly complaining of the gastrointestinal disorders.

The leading role of the virus penetration into the cell is determined by the receptors of angiotensin-converting enzyme 2 (ACE-2). ACE-2 receptors are widely present in the gastrointestinal tract, especially in the small and large intestines. The receptor-binding domain of SARS-CoV-2 is highly specific to ACE-2, which explains the easy spread of the virus among humans. SARS-CoV-2 RNA is found in scrapings and smears from the rectum. In addition to gastrointestinal symptoms, elevated enzyme values may be detected in the blood of patients with COVID-19, indicating liver damage. The causes may be immune load, hepatotoxicity of drugs, and damage by a virus that can bind to cholangiocytes through ACE-2 receptors and lead to liver disorders.

For effective recovery after coronavirus infection, nutrition should be balanced, consisting of sufficient caloric content, include low-fat meats, fish, cereals, fermented dairy products, vegetables and fruits, as a source of antioxidants, vitamins, fiber necessary for the intestinal microbiota. Under the control of the study of feces for dysbiosis, probiotics (ProbioLog, Lactobacterin, Linex Forte, Bac-Set Forte, Bifiform, Bactistatin) and prebiotics (Maxilac, Hilac Forte) will need to be added to the treatment — a course of up to a month.

HIPPOCAMPUS AND ITS MEANING

E. Khanmamedova – 2nd-year student
Supervisors: A.E. Pavlova, I.A.Bibik, Cand.Ped.Sc.

The hippocampus is the main structure of the limbic system, located deep in the temporal lobes. Morphofunctionally it is connected with other parts of the brain. When the activity of the hippocampus is disrupted, memory for events close to the moment of damage (retrograde amnesia) is disrupted, the processes of memorization, processing of new information, the difference in spatial signals are disrupted. There is also a decrease in emotionality, initiative, slowing down the speed of the main nervous processes, the thresholds for calling emotional reactions increase.

STUDENT STRESS

L. Gendrikh, A. Yakimov - 2nd-year students
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There is a large amount of evidence that chronic stress is a companion of student life. The stress experienced by students can affect learning, which hinders academic performance. Difficulties with academic performance, in turn, also create discomfort, as a result of which the overall stress increases.

Stress is a non-specific (general) reaction of the body to an impact (physical or psychological) that violates its homeostasis, as well as the corresponding state of the nervous system of the body (or the body as a whole).

At the psychological level the intensity of modern life provokes the emergence of negative emotional experiences and stress reactions that can lead to the formation of pronounced and prolonged stress states.

For a modern student, as for any person in general, stress is not a supernatural phenomenon, but rather a reaction to accumulated problems, to the endless process of dealing with everyday difficulties. Stress can be caused by factors related to the work and activities of the organization or events in a person's personal life.

We have identified the following problems and difficulties for a university student: lack of sleep; unreleased and unprotected laboratory work; tasks not completed or incorrectly completed; a large number of absences in any subject; lack of coursework or a discipline project at the right time; insufficient knowledge of the discipline; poor academic performance in a certain discipline; overload or too small workload of the student, i.e. a task that should be completed for a specific period of time; conflict of roles. It may arise as a result of differences between the norms of an informal group and the requirements of a formal organization (teacher). In this situation, the student may feel tension and anxiety because he wants to be accepted by the group, on the one hand, and comply with the requirements of the teacher, on the other; lack of interest in the discipline or the work offered to the student; poor physical conditions

It is also not necessary to discount personal factors. This may include the illness of a family member, a change in the number of friends, conflicts with classmates and loved ones, relocation, significant personal achievements, changes in financial situation and other factors.

Having studied the scientific material on this topic, we have identified the following methods of dealing with stress that a student can resort to: when allocating time, keeping the situation under control is no less important than managing stress; protecting yourself from stress, you can resort to imagination; short walks in the fresh air; visiting cultural and entertainment institutions; socializing with friends or other pleasant company; laughter is a good cure for stress. It trains many muscles, relieves headaches, lowers blood pressure, normalizes breathing and sleep; massage; sports activities.

Factors that reduce the stress of the environment and its negative impact on the body are the predictability of external events, the ability to prepare for them in advance, as well as the ability to control events, which significantly reduces the impact of adverse factors. Volitional qualities play a significant role in overcoming the negative impact of adverse conditions on human activity. An important role in the regulation of mental states, in how a person reacts to the effects of environmental stressors, is played by individual-typical features of the nervous system and personality. It is known that individuals with high nervous system strength are characterized by greater stability, better tolerance of stressful situations compared to individuals with weak nervous system strength. Thus, evidence has been found that cheerful people are more stable, able to maintain control and criticality in difficult situations.

Thus, we see that stress is to a large extent an individual phenomenon.

An important area of psychological assistance is teaching a person certain techniques and developing skills of behavior in stressful situations, increasing self-confidence.

Having conducted our research, we can offer a number of recommendations that will help to prepare in a timely manner for a stressful event or life situation and weaken their negative impact on the body: collect sufficient information about the possibility of such situations; think about ways to prevent specific life hazards, try to find ways to mitigate them; do not try to make hasty conclusions on the eve of the event itself; realize that a person is able to solve most of the stressful situations himself without resorting to outside help; strive to actively intervene in a stressful situation. An active lifestyle contributes to the creation of a protective background against stress in the body, improving the activity of adaptive organisms; understand and accept that serious changes are an integral part of life; remember that stressful life situations are mastered faster and better by those who know how to use relaxation methods.

Stress in student activity is a daily overload associated with the peculiarities of the learning process at the university and having direct and independent effects on well-being and mental or somatic functions. It depends on the student himself what his lifestyle will be - healthy, active or unhealthy, passive, and, consequently, how often and for a long time he will be in a stressful state.

CONSEQUENCES OF CORONAVIRUS IN SPAIN

B.Namzyn - the 2nd-year student
Supervisors: ass Professor L.
A.Guba, Cand.Biol.Sc., Assoc.Prof.,I.A.Bibik,Cand.Med.Sc.

The coronavirus pandemic, which forced Spain to take strict quarantine measures, caused huge damage to the country's economy, which negatively affected the situation of the population in terms of the scale of economic damage, the country leads among 37 developed countries of the world that are members of the Organization for Economic Cooperation and Development (OECD). Experts see the reason for this situation not only in the peculiarities of the Spanish economy, which largely depends on foreign tourism, but also in the policy of the current coalition government of the country. So in an environment where forecasts - both from local authorities and international financial structures - promise a further deterioration of all socio-economic indicators, Spaniards rely only on the help of the European Union.

ASYMMETRY OF THE BRAIN

V. Muromova – the 2nd-year student
Supervisors: A.E. Pavlova, I.A. Bibik, Cand.Med.Sc.

The brain is the main regulator of all functions of the human body. The structural features of the hemispheres differ from each other, as well as the set of functions that they perform. This is the manifestation of the interhemispheric asymmetry of the brain.

Interhemispheric asymmetry of the brain is one of the fundamental laws of the organization of the brain, not only in humans, but also in animals. It manifests itself not only in the morphology of the brain, but also in the interhemispheric asymmetry of mental processes.

In the process of individual development, the severity of interhemispheric asymmetry changes - there is a lateralization of brain functions. Lateralization (lat. Lateralis - lateral, located to the side) is the process by which various functions and processes are associated with one or the other half of the brain. The most prominent manifestations of hemispheric asymmetry are right and left hand use and language proficiency.

One of the discoverers of the functional symmetry of the brain is the French scientist Marc Dax. In 1836, physician Mark Dax made a presentation at a meeting of the medical society. He found signs of damage to the left hemisphere in the observed patients with speech loss. He was unable to identify cases of loss of speech in case of damage to the right hemisphere.

Violation of interhemispheric interaction is manifested in impaired reciprocal motor acts, anomie (impaired ability to give a verbal report on information coming to the right hemisphere), discopy - dysgraphia (impaired ability to write and draw with both hands). Interhemispheric interaction can be disrupted either completely or partially.

At present, the problem of interhemispheric asymmetry is being studied, first of all, within the framework of the functional specificity of the cerebral hemispheres. The functional specificity of the cerebral hemispheres is the specificity of information processing and cerebral organization of functions inherent in the right and left hemispheres of the brain, which is determined by integral hemispheric factors. In other words, this is the specificity of the contribution that each hemisphere makes to any mental function. Thus, the interhemispheric asymmetry is not global, but partial: the right and left hemispheres take on a different character and unequal importance in the implementation of mental functions. In different systems, the nature of functional asymmetry may be different.

Neuropsychology occupies an important place among the scientific disciplines investigating the problem of interhemispheric asymmetry. In modern neuropsychology, there are two main directions in the study of the problem of interhemispheric asymmetry of the brain:

• the first direction is an experimental study of the specificity of disorders of individual (verbal and non-verbal) mental functions with damage to symmetrical parts of the left and right hemispheres of the brain.

• the second direction - comparison of integral neuropsychological syndromes arising from damage to symmetrically located structures of the left and right hemispheres

Since interhemispheric interaction serves as the basis for the implementation of higher mental functions, a violation of this interaction in adults can lead to the formation of a split-brain syndrome. This syndrome manifests itself in a violation of sensory, speech, motor and constructive-spatial functions. Disorders that occurred at an early age can be partially compensated.

It is believed that the interhemispheric asymmetry of the brain is also expressed in the fact that the left hemisphere maintains a connection with objective reality and conscious actions, and the right one - with an altered state of consciousness, as it supports unconscious brain activity.

FEATURES OF ANTICOAGULANT THERAPY FOR COVID-19

I Mi Dia, R.V. Salogub– the 6th-year students
Supervisors: I.V. Kostrova, O.V. Prikhodko, Prof., I.A. Bibik, Cand.Ped.Sc.

In the pathogenesis of COVID-19, the damage of the microvasculature plays an important role. Lung damage in COVID-19 is characterized by the pronounced plethora of capillaries of the interalveolar septa, as well as branching of the pulmonary arteries and veins, with slowing down of blood flow, with sludge of erythrocytes, fresh fibrin and appearing of blood clots; intrabronchial, intrabronchiolar and intraalveolar hemorrhages, which are a substrate for hemoptysis, as well as perivascular hemorrhages. Damage in the vascular bed of the lungs is an important factor in the pathogenesis of hypoxia and ARDS.

Patients with a critical course of COVID-19 develop vascular endothelial dysfunction, coagulopathy, thrombosis with the presence of antibodies to phospholipids, with a clinical picture resembling a catastrophic antiphospholipid syndrome. Hyperinflammation in COVID-19 can be manifested by cytopenia (thrombocytopenia and lymphopenia), coagulopathy (thrombocytopenia, hypofibrinogenemia, and increased blood D-dimer), tissue damage / hepatitis (increased LDH activity, serum aminotransferases), and macrophage hepatocytin activation (increased serum).

Features of the use of anticoagulants: unfractionated heparin IV infusion, optimally under the control of anti-Xa activity (APTT may increase with COVID-19, therefore it may be unreliable). Low molecular weight heparins (Dalteparin sodium, Nadroparin calcium, Enoxaparin sodium, Parnaparin sodium, Bemiparin sodium) and synthetic anticoagulants (Fondaparinux sodium) are contraindicated in severe renal failure. In the absence of anticoagulants for parenteral administration, oral anticoagulants (Rivaroxaban and Apixaban). It is advisable to use Dabigatran etexilat for dose selection in patients with very low or high body weight, severe renal dysfunction, high risk of bleeding, during pregnancy.

BITE ANOMALIES

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Supervisors: A.E. Pavlova, I.A. Bibik, Cand.Ped.Sc.

Bite is the relationship of the dental rows with maximum contact and full occlusion of the teeth of the upper and lower jaws. A distinction is made between physiological and pathological bites.

Physiological bite ensures proper functioning of the teeth and jaw system: chewing of food, clear diction, free breathing, etc.

Bite anomalies:

- Prognathia (overlapping of the incisors of the lower jaw over the incisors of the upper jaw);
- Prognathia (tilting forward of the upper and lower teeth);
- Closed bite (the upper incisors completely overlap the lower incisors);
- Open bite (a gap is formed between the upper and lower incisors);
- Cross bite (the front teeth close properly and the lower molars are pointing away from the upper teeth).

Unresolved bite anomalies lead to jaw deformities, impaired chewing, breathing, etc.

WHAT DO WE KNOW ABOUT AMYGDAL OID NUCLEUS

R. Anisimov – the 2nd-year student
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The amygdaloid nucleus is located deep in the temporal lobe. Its functions are associated with the provision of defensive behavior, autonomic, motor, emotional reactions and motivation of conditioned reflex behavior.

When the amygdaloid nuclei are irritated, a parasympathetic effect of the cardiovascular and respiratory systems occurs: an increase in blood pressure, a decrease in the heart rate, a violation of the conduction of excitation along the conduction system of the heart; arrhythmias and extrasystoles occur. Also, with artificial activation of the amygdala, respiratory depression occurs, and sometimes a cough.

When the tonsils are damaged, in animals, there is a decrease in the adequate preparation of the autonomic nervous system for the organization and implementation of behavioral reactions: the disappearance of fear, aggression, and others. Probably, some innate unconditioned reflexes realizing the memory of danger disappear.

ROLE AND SIGNIFICANCE OF VITAMIN A IN THE HUMAN BODY

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Vitamin A is involved in redox processes, regulation of protein synthesis, promotes normal metabolism, the function of cell and subcellular membranes, plays an important role in the formation of bones and teeth, as well as fatty deposits; essential for the growth of new cells, slows down the aging process. Vitamin A supports night vision through the formation of a pigment called rhodopsin, which is able to capture minimal light, which is very important for night vision. It also helps to moisturize the eyes, especially the corners, preventing them from drying out and subsequent injury to the retina.

Vitamin A is essential for the normal functioning of the immune system and is an essential part of the process of fighting infection. The use of retinol increases the barrier function of the mucous membranes, increases the phagocytic activity of leukocytes and other factors of nonspecific immunity. Vitamin A protects against colds, flu and infections of the respiratory tract, digestive tract, urinary tract. The presence of vitamin A in the blood is one of the main factors responsible for the fact that children in more developed countries are much easier to tolerate infectious diseases such as measles, chickenpox, and while in countries with a low standard of living, mortality from these "harmless" viral infections. Vitamin A supply prolongs the life of even AIDS patients.

Retinol is essential for the maintenance and repair of epithelial tissues that make up the skin and mucous membranes. It is not for nothing that almost all modern cosmetics contain retinoids - its synthetic counterparts. Indeed, vitamin A is used in the treatment of almost all skin diseases (acne, pimples, psoriasis, etc.). In case of skin damage (wounds, sunburns), vitamin A accelerates the healing process, as well as stimulates collagen synthesis, improves the quality of newly formed tissue and reduces the risk of infections.

Due to its close connection with mucous membranes and epithelial cells, vitamin A has a beneficial effect on the functioning of the lungs, and is also a worthwhile addition in the treatment of certain diseases of the gastrointestinal tract (ulcers, colitis). Vitamin A takes part in the synthesis of steroid hormones (including progesterone), spermatogenesis, and is an antagonist of thyroxine, a thyroid hormone. Both vitamin A and β-carotene protect the membranes of brain cells from the damaging effects of free radicals, while β-carotene neutralizes the most dangerous types of free radicals: polyunsaturated acid radicals and oxygen radicals. The antioxidant effect of β-carotene plays an important role in the prevention of heart and arterial diseases, it has a protective effect in patients with angina pectoris, and also increases the level of "good" cholesterol in the blood.

Currently, the participation of vitamin A in the protection of cell membranes from oxidants has been shown - that is, vitamin A has an antioxidant function.

TETRALOGY OF FALLOT

V.N. Lukyanenko, S.V. Shubnikova – the 3rd-year students
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Tetralogy of Fallot is a complex congenital heart disease characterized by the presence of pronounced stenosis of the pulmonary artery, a large defect of the interventricular septum, displacement of the aorta to the right ventricle, hypertrophy of the wall of the right ventricle.

Tetralogy of Fallot is a congenital heart disease, and the child's condition mainly depends on the degree of PA stenosis, the size of the PDA, and the presence of large aorto-pulmonary collateral arteries. With the progression of PA stenosis, closure of the PDA, collateral arteries, the state is worse than bad and becomes critical.

TOF is diagnosed in 8-13% of all patients with congenital heart disease. Among the defects requiring surgical treatment in early childhood, the share of Tetralogy of Fallot accounts for 15%. The incidence of neonatal malformation ranges from 4 to 7%. The average life expectancy with tetralogy of Fallot is 12-13 years and depends on the degree of PA stenosis. Mortality during the first year of life is 25%, by the age of 3 is 40%, by the age of 10 is 70%, by the age of 40 years of life is 95%. With the "pale" forms of the defect, life expectancy is somewhat longer than with the cyanotic form. Usually, severe non-operated patients die from thromboembolism of cerebral vessels with abscesses, the development of heart failure, infective endocarditis.

All patients with tetralogy of Fallot are subject to surgical treatment. Drug therapy helps with the development of dyspnea-cyanotic attacks. At the first stage, newborns and young children with severe TOF scheme require palliative operations, which would reduce the risk of complications during subsequent radical correction of the defect. Radical correction of TOF provides VSD plasty and elimination of right ventricular outlet obstruction. It is usually carried out between the ages of six months and 3 years.

Of course, it is very difficult to judge this. Simple radical correction with TOF is noted for a relatively large percentage of mortality in the immediate postoperative period, while with a gradual radical correction, the risk of postoperative mortality decreases to 7%.

MEDICAL AND BIOLOGICAL CONSEQUENCES OF HIV IN THE AMUR REGION

V. Muromova, Zh. Boy – the 2nd –year students
Supervisors: L.A. Guba, I.A. Bibik, Cand.Ped.Sc.

Human Immunodeficiency Virus is a retrovirus from the genus of lentiviruses that causes a slowly progressive disease - HIV infection. The virus infects cells of the immune system that have CD4 receptors on their surface: T-helpers, monocytes, macrophages, Langerhans cells, dendritic cells, microglia cells.

The human immunodeficiency virus belongs to the so-called socially significant diseases: there is still no medicine that can cure it completely, and if left untreated, HIV is life-threatening.

There is no vaccine that protects against the risk of contracting an infection. The virus is transmitted when the blood of an HIV-infected person enters the body of a healthy person during unprotected sexual intercourse and does not threaten when kissing or shaking hands. It is completely impossible to destroy the virus, but there is a special antiretroviral therapy that prevents it from developing and makes an HIV-positive person harmless to others.

The Amur Region ranks fourth in the regions in terms of the number of HIV-infected people.

How is HIV transmitted?

In an HIV-infected person, the concentration of the virus is highest in blood, lymph, semen, vaginal secretions and breast milk. Therefore, HIV infection can be contracted:

- during sexual intercourse without using a condom;
- when using a syringe (needle, solution) used by an HIV-infected person;
- during transfusion of infected blood;
- during childbirth - the child can be infected from the mother;
- when breastfeeding a child, if the mother is a carrier of the virus.

In tears, saliva, sweat, urine, vomit, nasal discharge, HIV is contained in a very low concentration, insufficient for infection.

How is HIV not transmitted?

- when shaking hands and touching;
- with a kiss;
- when using one dish;
- when coughing or sneezing;
- through bed linen or other personal items;
- when using a public toilet;
- through insect bites.

How to avoid getting HIV?

Despite the growing HIV epidemic, infection can be avoided. Prevention rules are simple but reliable. To completely protect yourself from the disease, it is enough:

- use condoms during sexual intercourse;
- use sterile medical instruments.

HIV-infected mothers are more likely to have healthy babies if women are treated during pregnancy.

HIV is very dangerous BUT it can be avoided !!!

POSSIBILITIES OF CORRECTION OF PSYCHO-EMOTICAL DISORDERS AMONG PATIENTS IN THE ACUTE PERIOD OF THE ISCHEMIC STROKE BY METHODS OF REFLEXOTHERAPY

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Supervisors: E.E. Molchanova, Cand.Med.Sc., I.A.Bibik, Cand.Ped.Sc.

Depressive disorder with anxiety, phobic and motivational disorders negatively affect the rehabilitation process after a stroke, which interferes with the patient`s labor and social adaptation. The frequency of occurrence of PD, according to various data, ranges from 30 to 60%.

To study the effectiveness of reflexotherapy in the correction of psycho-emotional disorders, a psychological and psychometric dynamical study of 70 patients (31 men and 39 women, mean age 62.9 ± 1.27 years) with acute ischemic stroke has been held (in accordance with BDI scores, Spielberger test, "The motivation for success and motivation for fear of failure" questionnaire (A.Rean's questionnaire)). Assessment of the severity of neurological deficit was carried out on the scale NIHSS, while Barthel ADL index was used to assess patients' daily life activities after a stroke.

In addition to medical treatment, reflexotherapy had been carried out for 15 days. Monitoring of the status of the control group of patients (30 people), corresponding to the study group by sex, age and severity of neurological symptoms, was conducted simultaneously. Patients in this group received only standard therapy. The severity of depression and anxiety in the main group significantly decreased (by 4.9 points (30 %) on Beck scale, and 8.5 points (22 %) on Spielberger scale, $p < 0.001$), while in the control group significant differences in indices were not detected (1.8 (12%) and 2.1 points (6%), respectively). A.Rean's questionnaire analysis showed that during treatment, motivational levels in the study group increased significantly ($p < 0.001$), and the patients were oriented to success. While in the control group, significant changes in the level of motivation did not happened.

The results of the study showed that reflexotherapy in the rehabilitation of post-stroke disorders of the psycho-emotional sphere gave high performance indicators. Reflexotherapy contributed to the restoration of lost functions and accelerated the adaptation of patients to everyday life, improving its quality.

CLINICAL AND ANATOMICAL ASPECTS OF THE EXTRAPYRAMIDAL SYSTEM

Zh.Patsan – the 2nd-year student
Supervisors: A.E.Pavlova, I.A.Bibik, Cand.Ped.Sc.

Extrapyramidal system is subcortical and stems extrapyramidal formations and motor pathways that do not pass through the pyramids of the medulla oblongata participating in the control of movements, maintaining muscle tone and posture. The extrapyramidal system consists of the following formations:

Subcortical level: nucleus caudatus and lenticular nucleus (nucleus lentiformi), which consists of the outer core - the large dark lateral part of the basal ganglion (putamen) and two internal - pallidus (globus pallidus) - a subcortical structure of the brain, Lewis' subthalamic body. They are located in the region of the visual hillocks.

In the region of the brain stem: substantia nigra, red nucleus (nucleus ruber), quadruplet bodies (corpora quadrigemina), Darkshevich nucleus, reticular formation (formation reticularis) trunk (reticular formation);

Areas of the cerebral cortex (frontal lobes).

The constituent parts of the extrapyramidal system are connected by means of conductors, many of which pass through the visual hillocks. Through the visual hillocks the connection of the subcortical

nuclei with the cerebral cortex is carried out. These connections form closed neural circles uniting numerous extrapyramidal the formation of the subcortical divisions, the brain stem, the cerebral cortex in uniform functional systems.

From the cortex of the anterior zone of the frontal lobe through the radiant crown, the anterior limb of the internal capsules the bundles of fibers are directed to the subcortical ganglia and nuclei of the trunk. Tailed the nucleus, putanem, pallidum are associated with the underlying cells of the brain stem (trunkus cerebri), reticular formation. From the cores of the trunk, the bundles of fibers go to the anterior horns of the spinal cord and they end on α- and γ-motor neurons. It is reticulospinal tract, vestibulospinal, rubrospinal (Monakovsky), tectospinal, medial longitudinal fasciculus (MLF). The most powerful is reticulospinal tract.

When the extrapyramidal system is damaged, motor functions are impaired, muscle tone decreases. In the clinical practice two lesions syndromes of extrapyramidal system are distinguished: hypertensive hypokinetic, occurred in cases of tremors or Parkinson's disease; and In hypertonic–hyperkinetic syndrome leading to various hyperkinetic disorders (chorea, athetosis, spastic torticollis, etc.)

The main syndromes of extrapyramidal disorders are: akinetic and hypotonic-hyperkinetic syndromes, as well as cognitive impairment.

THE PHYLOGENESIS OF THE EYEBALL

Komlev D. – the 2nd-year student
Supervisors: A.E.Pavlova, I.A.Bibik,Cand.Ped.Sc.

Even the simplest invertebrates have the ability to phototropism due to their, albeit extremely imperfect, vision.

In worms, light is perceived by scattered sensitive cells, not by sensory organs. Jellyfish, lancet and many other animals have sensitive eyes, where the processes and receptors of nerve cells are concentrated. For the purpose of protection, these eyes are immersed in the thickness of the epidermis, but they are open to light. Then the edges of the fossa close into a bubble eye, and the bubble cuticle participates in the formation of the lens. An essential feature of the structure of the eye is the presence of pigment cells that isolate each photosensitive cell from each other and from side rays, which contributes to the perception of a directly directed light flux. In the absence of pigment, the blood vessels are translucent, so the eyes are red.

In invertebrates, individual eyes are combined into more complex ones. The compound eye of arthropods consists of a bundle of transparent cylinders-ommatidii, which perceives light falling at a certain angle. Ommatids are arranged in a circle, which creates conditions for a wide field of view.

Arthropods often have several simple eyes (sometimes an unpaired simple eye, for example, a nauplial eye in crustaceans) or a pair of complex faceted eyes. In evolution, faceted eyes occurred by merging simple eyes. The eyes of horseshoe crabs and scorpions, similar in structure to the simple eye, apparently arose from the complex eyes of trilobite-like ancestors by merging their elements.

DOMINANCE CONCEPT BY A.A. UKHTOMSKY. HISTORICAL REVIEW

A. Konev – 5th-year student
K. Drobyaskina – 2nd-year student
Supervisors: G.E. Cherbikova, Assoc.Prof., I.A. Bibik, Cand.Ped.Sc.

Ukhtomsky formulated successfully the principle of Dominant as a common principle that allows us to explain many psychological phenomena from a unitary perspective. Ukhtomsky studied brain activity with the physiological methods available at the time, all the while giving a psychological

interpretation to almost all of his observations. In perspective, the goal was to describe the mechanisms of behavior with a degree of accuracy that would enable the use of mathematical methods in their study.

The main idea of our historical research was to clarify the scientific way that had lead Ukhtomsky to the dominance concept. Definition of dominance was developed by Ukhtomsky based on physiological material. At his time the main directions of physiological research included brain mapping and reflexes. Both of these directions were actively developed by Russian physiologists: it's sufficient to mention the Noble prize laureate I.P. Pavlov in this regard.

So, Ukhtomsky started to investigate the regularities of how such a "dominant" center was formed in 1904 after an unsuccessful laboratorial experiment, when the stimulation of a certain brain area of the animal hadn`t given the expected motor reaction, since the organism was preparing for another kind of reflex activity. There are 4 features that characterize a potentially dominant center:

1. Heightened excitability. The excitation threshold of a dominant is low. An indifferent stimulus can evoke a dominant only in this condition.
2. Excitation stability. Excitation has already occurred, but it should "not be transient" in order to influence the course of reactions.
3. Capacity to sum excitations. The capacity of a center to become dominant depends on the "ability of a center to summate its own consequent excitations".
4. Inertia, in which "the significance of distal waves is mainly expressed in the maintenance and acceleration of the established dominant reaction towards its completion"

In various texts, Ukhtomsky compares dominance with a charged trigger, an explosion or catalytic process activated by an external signal. "Dominance: a large amount of potential energy in significant tension, easily discharged by different cues – a decelerated explosion, caused by detonation". A dominant appears for realizing a behavioral act. While it lasts it connects all the individual capacities and powers of the body to solve a given task.

Thus, the creative legacy of Ukhtomsky has not yet been exhausted. It must be investigated by the united efforts of psychologists, philosophers, physiologists, mathematicians.

TECHNOGENIC DISASTER IN PRIMORYE

E. Belyaeva, S. Onoprienko – the 2nd-year students
Supervisors: L.A. Guba, Assoc.Prof., I.A. Bibik, Cand.Ped.Sc.

75 years have passed since the tragic event. It was at the port of Nakhodka at the pier at Cape Astafiev. Into a steamship named the Dalstroy ammonium nitrate was loaded. TNT was placed in the next hold. And on June 24, 1946 the explosion of the steamship occurred. More than 100 people were killed and about 200 injured.

CONSEQUENCES OF COVID-19 IN NOVOSIBIRSK AND THE NOVOSIBIRSK REGION

Erokhina N. – 2nd year student
Scientific leader: candidate of biological sciences, associate Professor Guba L.A.

During the period from 2020 to 2021, 77976 people were infected in Novosibirsk and the Novosibirsk region. Of these, only 74,352 people recovered. Also, according to official data, Covid-19 caused the death of 3,624 people.

	Total infected	Lethal outcome	Recovered everything	Vaccinated
2020 year	30548	1499	29049	
2021year	47428	2125	45303	729097
Total	77976	3624	74352	729097

AUTOIMMUNE DISEASE: SYSTEMIC LUPUS ERYTHEMATOSUS

L. Golub – the 3rd-year student
Supervisors: E.E. Abramkin, I.A. Bibik, Cand.Ped.Sc.

Systemic lupus erythematosus, an autoimmune disease that occurs predominantly in young women, involves many tissues and organs. Important renal abnormalities involving the glomeruli include swelling and proliferation of endothelial and mesangial cells, fibrinoid necrosis, thrombi, neutrophil infiltration, crescent formation, increased mesangial matrix, and thickening. Deposits of antigen-antibody complexes in the basement membrane often appear as “wire-loop” lesions. Focal proliferative lupus nephritis (class III) is characterized by focal involvement of some of the glomeruli, swelling and proliferation of endothelial and mesangial cells, neutrophil accumulation, and necrosis. Systemic lupus erythematosus can produce pancarditis with ibrinous pericarditis and pericardial effusion, multifocal lymphohistiocytic myocarditis, and mural and valvular endocarditis. Valvular inlammation can be extensive, leading to ibrinous verrucae on the upper and lower surfaces of the valve leaflets, particularly those of the mitral valve. This valvular pathology is known as the atypical verrucous endocarditis of Libman and Sacks. Healing of the inflammation leads to progressive valvular deformity, including fibrous adhesions of the posterior mitral leaflet to the adjacent left ventricular wall with resultant mitral stenosis or regurgitation or both. Restrictive pulmonary disease is evident in up to 70% of patients with systemic lupus erythematosus (SLE). SLE pulmonary changes are DAD, nonspeciic interstitial pneumonitis with focal atelectasis, nonspecific infections, leukocytoclastic vasculitis, and focal pulmonary hemorrhage. Arthralgias, which are often the first manifestation of the disease, are usually incommensurate with physical findings. Polyarthritis is usually symmetrical, non-erosive, and non-deforming. With a long-term current disease, deformities are noted according to the type of changes characteristic of rheumatoid arthritis: fingers curved in the form of a swan neck. A butterfly rash, which is persistent erythema on the cheeks and bridge of the nose without affecting the nasolabial folds. The chin and ears may also be involved. Intense rashes on the cheeks often cause severe atrophy, scarring and hypopigmentation. Rash caused by photosensitivity to ultraviolet radiation. Discoid rash, presented by erythematous plaques protruding above the surface of the skin with tightly attached keratotic scales and follicular plugs. In old lesions, atrophic scarring may be observed. Ulcers that often occur in the nose, mouth, or vagina (usually painless).

MAGNETIC RESONANCE IMAGING

D.Komlev – the 2nd-year student
Supervisors: A.E. Pavlova, I.A.Bibik,Can.Med.Sc.

Currently, MRI is used quite often. It is used to diagnose diseases of the central nervous system (brain and spinal cord), and the musculoskeletal system (spine, muscle-joint system) and internal organs. Magnetic resonance angiography allows you to see the vessels to assess their condition (anerysms, etc.). The method is widely used in the study of upper respiratory tract-malformations, inflammatory diseases of the paranasal sinuses. This method is the most accurate in identifying pituitary adenomas.

In recent years during diagnostic MRI is increasingly focusing on pathology of the internal organs of the pelvic organs, the eye socket.

1. MRI medium

When analyzing the MR images of the shadow state is evaluated at various levels.

The upper level is the exit site of the hepatic veins of the liver parenchyma. It is evaluated at various levels.

The level of the gate of the liver. It is determined by the branch of the portal vein, hepatic artery and vein, and common hepatic bile duct lymph vessels, as well as 1-7 seconds segments liver. The size of the liver is measured.

Normally, the vertical size of the right lobe is 12-14 cm, 7-8 cm left. The contours of the liver are clear and smooth.

2. Special methods of MRI

a) MRI with dynamic contrast enhancement;

b) MR angiography;

c) MR spectroscopy - is, in fact, the only technique that allows us to evaluate in vivo and non-invasively the hepatic metabolism at the cellular level, directly on the chemical composition of the liver.

Contraindications:

The presence of a pacemaker; a hearing aid; implants; the patient's weight more than 120 kg;

Advantages of the method:

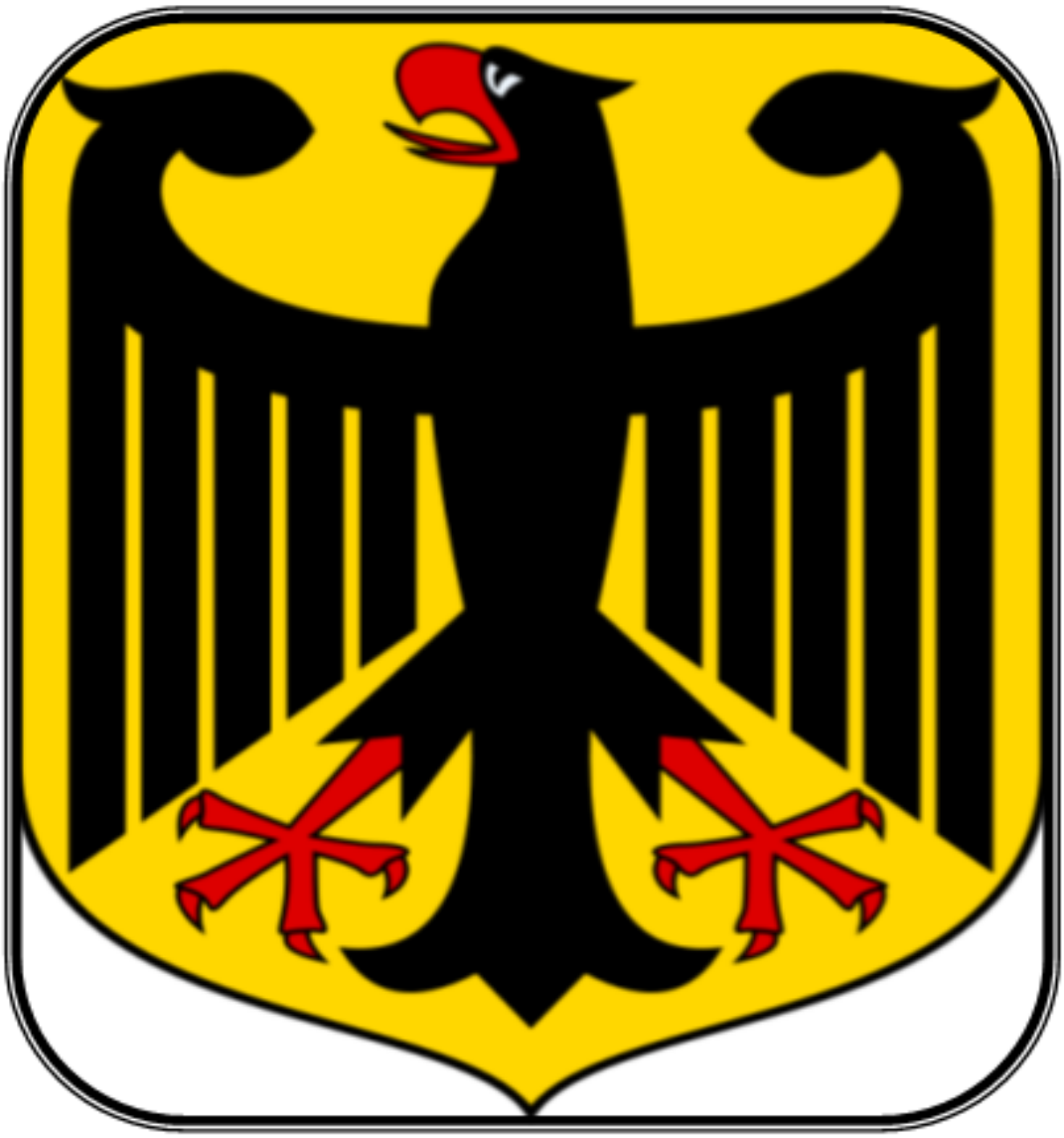
-The absence of radiation exposure to the patient; high tissue contrast of the image; possibility of obtaining sections in any plane.

PNEUMOCYSTIC PNEUMONIA IS THE MAIN CAUSE OF DEATH IN PEOPLE WITH AIDS?

Golub L. - 3 к.
Supervisors: Ph.D. O.V. Bubinets

Pneumocystis pneumonia is an opportunistic infection that is severe in immunocompromised patients. AIDS is currently considered the main background disease. In people without HIV infection, pneumocystis pneumonia is less common. The clinical picture of the disease in persons with HIV infection is characterized by a gradual onset, reminiscent of the development of a banal infection of the respiratory tract. The first signs of pneumocytosis are general weakness and fever, which may be accompanied by chills and sweating. At the beginning of pneumocystis pneumonia, a low temperature is usually observed, which subsequently either rises to febrile numbers, or remains subfebrile. Then comes a paroxysmal, unproductive, obsessive cough (especially at night and in the morning), which persists for several weeks and even months, or becomes constant and painful. The earliest symptom of pneumocystis pneumonia is shortness of breath, which occurs in almost all patients. Attention is drawn to the dissonance between pronounced respiratory disorders and meager physical data. Diagnosis of pneumocystis pneumonia in HIV-infected patients is difficult due to the absence of pathognomonic symptoms, frequent association with opportunistic diseases against the background of changes in the immune system, and also due to the lack of precise laboratory criteria. Confirmation of the diagnosis of pneumocystosis is based on the isolation of the pathogen from the biological material of the respiratory tract. Because pneumocystis cannot be cultured, microscopic imaging is considered the standard of diagnosis here. An immunofluorescent study using monoclonal antibodies takes a long time and has certain errors. Polymerase chain reaction with the determination of mRNA or DNA of microorganisms is one of the most informative and quick ways to diagnose pneumocystis pneumonia. But despite the high specificity and sensitivity of molecular tests, it may be difficult to differentiate between colonization and infection. The most striking sign of the disease is severe hypoxemia. New technologies that allow the detection of mRNA have been proposed as markers of the viability of microorganisms, since mRNA is less stable than DNA. Therefore, if the patient is not infected with active viable microorganisms, the mRNA content should be significantly reduced or not detected. Unfortunately, no combination of symptoms, clinical signs, and radiographic findings can

serve as a diagnostic criterion for Pneumocystis pneumonia. Verification of the disease is currently based on molecular biological methods to identify the pathogen. Modern studies have shown that the mortality of patients with PCP infected with HIV varies widely - from 1 to 15% - and is significantly lower than the mortality of patients without HIV (30-40%). In this cohort (HIV-negative), the most common underlying diseases in patients are: hematological malignancies (29%), autoimmune diseases (20%), conditions after organ transplantation or hematopoietic stem cell transplantation (HSCT) (14%) , as well as solid tumors (6%). In HIV-negative patients, pneumocystis pneumonia is more acute, with a rapid increase in respiratory failure, more frequent development of spontaneous pneumothorax and other complications, and higher mortality (30-40%). This has been reported by investigators who noted clear differences in the clinical characteristics of PCP between patients with AIDS and hematological malignancies, including NHL. Thus, in patients with oncohematological diseases and NHL, more severe hypoxemia, a more acute onset of the disease, and a more rapid increase in respiratory failure were noted, requiring transfer to intensive care units for up to 50% of patients. The main clinical manifestations of PCP in hematological and NHL patients are: fever (86%), dyspnea (78%), nonproductive cough (71%) and severe hypoxemia (71%), while chest pain (14%) and chills (5%) were observed less frequently. The clinical course of the disease is usually acute. The first signs on CT of the lungs can be visualized already on the 3rd day from the onset of the disease. On CT of the lungs, PCP in this category of patients is visualized as bilateral interstitial infiltrates (80.4%) and bilateral ground-glass opacities (89.3%). Based on these data, it should be said that despite the high incidence of pneumocystosis in HIV-infected patients, the lethality of such patients is much lower than in HIV-negative patients.



DEUTSCHE ABTEILUNG

СЕКЦИЯ НЕМЕЦКОГО ЯЗЫКА

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Li K. - die Studentin des 5. Studienjahres
Wissenschaftliche Leiter - Salko I.N., Tkatschjowa N.A.

Jährlich werden in Russland mehr als 14.000 neue Fälle von bösartigen Neubildungen des Gebärmutterhalses und bis zu 40% registriert. Diese Pathologie wird in den späten Stadien der Krankheit (III-IV) erkannt, was das Überleben dieses Patientenkontingents negativ beeinflusst. Das Konzept der Krebsvorstufe wurde bereits 1886 von Williams vorgeschlagen, Cullen stellte 1900 fest, dass präinvasive Zustände den invasiven im Aussehen sehr ähnlich sind. Der Begriff “Ca in situ” wurde 1932 von Boroders eingeführt.

Die Kolposkopie ist eine Methode, um feinste Veränderungen der Schleimhaut des Gebärmutterhalses und der Vagina zu erkennen. (Saidl, 1932z).

Das Kolposkop wurde 1925 von Hans Ginselmann entwickelt. Das erste Analogon des Kolposkops war eine Kombination aus Leitz-Präparationslupe und Lichtquelle, später wurde eine zweite Version eines modernen Kolposkops mit modifizierten technischen Parametern wie Brennweite, Detektion und Beleuchtung konstruiert. G. Ginzelman beschrieb die Wirkung einer Essigsäurelösung auf das geschichtete Plattenepithel (MPE) und beschrieb 1936 Interpunktions- und Mosaikmuster bei zervikaler Dysplasie; 1940 verwendete er Grünfilter, um das Gefäßmuster bei Gesundheit und Krankheit zu beurteilen. Die nächste wichtige Etappe in der Entwicklung der Kolposkopie war 1972 die Gründung von Mardel-Plata (Argentinien) der Internationalen Föderation für zervikale Pathologie und Kolposkopie (IFCPC).

Die letzte kolposkopische Klassifikation wurde 2011 von der International Federation for Colpososcopy and Cervical Pathology (IFCPC) in Rio de Janeiro genehmigt.

Das erste inländische monokulare Kolposkop mit vierfacher Vergrößerung wurde 1928 von Alexander Germanovich Kan entwickelt. Man begann 1938 mit der Grundlagenforschung.

E. A. Tarnauskas schrieb 1956-57 eine Dissertation zum Thema "Kolposkopie und Diagnose der frühen Stadien des Gebärmutterhalskrebses" und veröffentlichte 1971 die erste Monographie "Grundlagen der Kolposkopie". 1997 wurde auch in Russland die Gesellschaft für zervikale Pathologie und Kolposkopie gegründet.

Derzeit wird diese Methode aktiv für die Diagnose und wirksame Behandlung der Zervixpathologie eingesetzt.

FARBENBLINDHEIT

Neklyudow W.O. – der Student des 2. Studienjahres
Wissenschaftliche Leiter: Proff. Krassawina N.P., Tkatschjowa N. A

Farbenblindheit ist eine erbliche, selten erworbene Erkrankung des menschlichen Sehapparates, die durch einen teilweisen oder vollstandigen Verlust der Anfalligkeit fur bestimmte oder alle Farben des Spektrums gekennzeichnet ist. Aus diesem Grund wird Farbenblindheit in verschiedene Arten unterteilt, abhangig von der Lichtempfindlichkeit.

Die Netzhaut ist die innere Hulle des Auges, in der sich lichtempfindliche Rezeptoren befinden — Nervenzellen: Stabchen und Zapfen.

Quantitativ sind die Zapfen viel kleiner, sie sind an einem bestimmten Ort konzentriert — dem gelben Fleck.

Aufgrund bestimmter lichtempfindlicher Pigmente sind Zapfen in der Lage, Wellen unterschiedlicher Spektrumlangen zu erfassen. So gibt es je nach Pigment drei Arten von Zapfen: Der S-Typ ist im violett-blauen Spektrum empfindlich, der M-Typ ist im grun-gelben und der L-Typ im gelbroten Spektrum empfindlich.

Eine gesunde Person hat eine ausreichende Anzahl von Zapfen aller Arten mit einer ausreichenden Menge an Pigment. Bei Mangel, Mangel an Pigment oder Zapfen entwickelt sich Farbenblindheit im Zusammenhang mit Farbwahrnehmungsproblemen.

Farbenblindheit als genetische Erkrankung tritt haufiger bei Mannern auf, wenn das gebundene rezessive Farbenblindheits-Gen mit dem X-Chromosom von der Mutter zum Sohn ubertragen wird. Bei Mannern wird der Defekt im einzigen X-Chromosom nicht durch den XY-sexuellen Satz von Chromosomen ausgeglichen. Bei Frauen kann sich Farbenblindheit manifestieren, wenn in beiden X-Chromosomen ein Farbenblindheitsgen vorliegt, wenn der Vater farbenblind ist. Die Mutter ist ein Trager. Infolge verschiedener Grade der Farbenblindheit leiden daran 2-8% der Manner und 0.8% der Frauen.

Erworbene Farbenblindheit tritt auf, wenn die Netzhaut oder der Sehnerv beschadigt werden. Diese Art von Farbenblindheit ist durch eine fortschreitende Verschlechterung und Schwierigkeiten bei der Unterscheidung von Blau und Gelb gekennzeichnet. Die erworbene Farbenblindheit ist auch mit altersbedingten Veranderungen verbunden, zum Beispiel Katarakte und die Einnahme verschiedener Medikamente.

Die Art der Farbwahrnehmung wird auf speziellen polychromatischen Rabkin-Tabellen bestimmt.

Die Behandlung von Farbenblindheit ist dank Gentechnik moglich - die Einfuhrung der fehlenden Gene in die Netzhautzellen. Es gibt auch Methoden zur Anpassung der Lichtempfindlichkeit mit speziellen Linsen.

DIE GESCHICHTE DER AMURER STAATLICHEN MEDIZINISCHEN AKADEMIE

Dzyga K. - der Student des 4. Studienjahres
Wissenschaftlicher Leiter: Tkatschjowa N. A

Am 23. Juni 1952 wurde eine Anordnung des Ministerrats der UdSSR über die Organisation des Staatlichen Medizinischen Instituts Blagoweschtschensk (BSMI) am 1. August 1952 in Blagoweschtschensk am Amur erlassen. Es war eine äußerst schwierige Zeit, als gleichzeitig die Gebäude des Instituts und der Wohnheime zu errichten, mit Geräten auszustatten und ein Lehrerteam bilden, das sowohl lehrende als auch wissenschaftliche Tätigkeiten ausüben sollte.

Aufgrund verschiedener alltäglicher Umständen sowie in Richtung des Gesundheitsministeriums kam nach Blagoweschtschensk gut ausgebildete Personal, das bereit war, mit seinen beruflichen Erfahrungen mit Studenten zu teilen, um zukünftigen Ärzten als Vorbild zu dienen. Es waren die ersten Lehrer der BSMI, die den Grundstein dafür legten, dass die BSMI (heute Amur State Medical Academy) zu einer der besten medizinischen Universitäten des Landes wurde.

Boris Nikolaevich Anfimow wurde der erste Rektor (Direktor) des BSMI. Professor, der Kandidat der medizinischen Wissenschaften, Anatom. Seit 1954 wurde als Rektor des BSMI von Professor Sergei Grigorijewitsch Ptizyn. Er leitete das Institut fünf Jahre lang. Er musste klinische Abteilungen bilden, ein Konzept für die Entwicklung der Universität erstellen.

Die Hauptaufgabe der Hochschule ist der Bildungsprozess. Er wird von der Ausbildungsabteilung, den Dekanaten organisiert.

In den 1980er Jahren wurden methodische Lehrsysteme in theoretischen und klinischen Abteilungsteams besonders intensiv gestaltet und verbessert.

Das Institut absolvierte jährlich bis zu 500 junge Spezialisten, sie arbeiteten in verschiedenen Regionen und Territorien der UdSSR, und die Hochschule hatte keine Beschwerden: Die Qualität der Ausbildung der Ärzte entsprach den hohen Gewerkschaftsstandards.

Wenn man über Amure Statliche medizinische Akademie spricht, sollte man die große Rolle der "respektablen" und "kleinen" Abteilungen und Kursen nicht vergessen: jeder hat seine eigene interessante Geschichte, Gegenwart und Zukunft. An der Spitze jeder dieser Unterabteilungen standen echte Fachleute, die eine hohe Verantwortung für ihre pädagogische, klinische und wissenschaftliche Arbeit trugen.

Eine der strukturellen Abteilungen der staatlichen medizinischen Akademie des russischen Gesundheitsministeriums ist die Klinik für Herzchirurgie, die 1975 von Professor Jaroslaw Petroitsch Kulik eröffnet wurde, um die Wirksamkeit der Behandlung von Herzpatienten zu verbessern.

Seit 1975 arbeitet die Klinik für Herzchirurgie mit dem künstlichen Kreislauf. Zur Behandlung von Patienten mit akuter Herzinsuffizienz wurden chirurgische Hilfsmittel zur Kreislaufunterstützung entwickelt. Erstmals wurden die Begriffe von Herzklappenprothesen begonnen.

Bildungsaktivitäten bestehen nach wie vor in der qualitativ hochwertigen Ausbildung von hochqualifiziertem, wettbewerbsfähigem medizinischem Personal für das Amurgebitt, den Föderationskreis Fernost und den asiatisch-pazifischen Raum, die Durchführung von Grundlagen- und angewandter Forschung und die Ausbildung von hochqualifiziertem Personal auf ihrer Grundlage, Gewährleistung des Bildungsprozesses der Jugend und des sozialen Schutzes der Studenten ...

DER 200. JAHRESTAG DES GROßEN VIRCHOW

Eltschaninow E. – der Student des 1.Studienjahres
Wissenschafftliche Leiter: Prof. E. N. Gordienko, N. A. Tkatschjowa

Die Morphologe feiern das 200-jährige Jubiläum des Vaters der "Zellulären Pathologie" Rudolf Virchow – einer der Reformatoren der wissenschaftlichen und praktischen Medizin, der Begründer der modernen pathologischen Anatomie, der Begründer der wissenschaftlichen Richtung in der Medizin, die in die Geschichte der Wissenschaft unter dem Namen zelluläre Pathologie bekannt ist.

Das von uns unternommene Studium seines kreativen Weges zeugt von den herausragenden Fähigkeiten und dem Fleiß des Wissenschaftlers. 1839 trat er mit siebzehneinhalb Jahren in das Berliner Medizinisch-Chirurgische Institut Friedrich-Wilhelm ein und wurde als Helmholtz Schüler des herausragenden Morphophysiologen Johannes Peter Müller. Nach seinem Abschluss der Universität 1843 verteidigte er ein Jahr später seine Doktorarbeit und erhielt eine Anstellung als wissenschaftlicher Mitarbeiter an der Charite-Klinik als Assistent im pathologischen Laboratorium. Nach 3 Jahren entdeckte Virchow als Pathologe das Gehirn, Gliazellen und charakterisiert es vorzeitig als tragendes Skelett oder "Zellzement", das das Nervengewebe stützt und hält. Nachdem Virchrow 1847 den Titel eines Assistenzprofessors erhalten hatte, stürzte er sich kopfüber in die pathologische Anatomie: er begann, die Veränderungen des materiellen Substrats bei verschiedenen Krankheiten aufzuklären. Er gab unvergleichliche Beschreibungen des mikroskopischen Bildes verschiedener kranker Gewebe und ging mit seiner Linse in jeden schmutzigsten Winkel von sechsundzwanzigtausend Leichen. Virchow, ein produktiver Wissenschaftler, hat tausend Werken zu den unterschiedlichsten medizinischen Themen veröffentlicht, wurde im selben Jahr zum Mitglied der Berliner Akademie der Wissenschaften gewählt. Gemeinsam mit Reichardt gründete Virchow 1847

die Zeitschrift Archive of Pathological Anatomy, Physiology and Clinical Medicine, bekannt als Virchow-Archiv, in der er seine Werke veröffentlichte; das Magazin wird bis heute veröffentlicht. 1856 nahm Professor Virchow die eigens für ihn eingerichtete Abteilung für pathologische Anatomie, allgemeine Pathologie und Therapie an der Universität Berlin auf. Gleichzeitig schafft er das Pathologische Institut und Museum; wird Direktor des Instituts für Pathologie. In dieser Position arbeitet er bis an sein Lebensende.

Die Namen der großen Deutschen, bei denen auch unsere Naturwissenschaftler, Morphologen, Genetiker, Physiologen studiert haben, lehren uns Zielstrebigkeit und große Arbeit im Wissen unseres gewählten zukünftigen Berufes - ARZT. Die Geschichte ist ein sicherer Weg in die Zukunft!

MATERIELLE GRUNDLAGE DES BEWUSSTSEINS

Kotscherga E.A. - die Studentin des 2. Studienjahres.
Wissenschaftliche Leiter - Siyanowa I. V., Tkatschjowa N.A.

Es gibt viele Definitionen von Bewusstsein. Laut dem großen enzyklopädischen Wörterbuch ist Bewusstsein die höchste Form der geistigen Reflexion, die einem sozial entwickelten Menschen innewohnt und mit der Sprache verbunden ist, der idealen Seite der Zielsetzungsaktivität.

Die materielle Grundlage des Bewusstseins sind die Neuronen der Großhirnrinde. Sie sind in der Lage, raum-zeitliche Selbstorganisation in Form von Funktionsmodulen oder Ensembles zu bilden, die der amerikanische Physiologe W. Mountcastle entdeckt hat. Diese funktionellen Ensembles sind in verschiedenen kortikalen Zentren lokalisiert. Jedes Modul enthält eine kleinere Untergruppe von vertikalen Einheiten, die denselben Untergruppen von Modulen zugeordnet sind, die die unterschiedliche Funktionen erfüllen. Auf diese Weise werden mehrere synaptische Verbindungen hergestellt, die neuronale Netze bilden, die die geeignete Reaktion bestimmen. Es wird davon ausgegangen, dass durch die Bildung solch ausgedehnter neuronaler Netze die Fähigkeit zur Abstraktion auftritt. Die Großhirnrinde analysiert dieselbe Situation, vergleicht eingehende Informationen mit Informationen aus dem Gedächtnis, prüft, überarbeitet und testet kontinuierlich. Dadurch kann die Großhirnrinde ein in der Vergangenheit entstandenes Bild mit dem aktuellen Bild der Außenwelt verschmelzen. Der Vergleich wiederholter Angaben mit aktuellen Informationen über die Umwelt ist die vermeintliche Grundlage des Bewusstseins.

Funktionelle Hemisphärenunterschiede wirken sich auch auf das Bewusstsein aus. Ihr Verständnis beruht auf einzigartigen Erfahrungen mit Patienten, bei denen die linke und rechte Hemisphäre getrennt sind – ihr Corpus callosum wurde durchgetrennt. In diesem Fall werden die Hemisphären füreinander "blind" und können keine Informationen austauschen, die sie von den Parteien unter ihrer Kontrolle erhalten haben. So entgeht die Information der rechten Hemisphäre aufgrund ihrer Stummheit dem Bewusstsein – sie wird von der linken „sprechenden“ Hemisphäre nicht erkannt und kann nicht geäußert werden. Die rechte Hemisphäre nimmt wiederum die Information der linken Hemisphäre nicht wahr. Es ist interessant, dass die linke Hemisphäre die Aktion der rechten "erklärt". Mit anderen Worten, wir können auf eine bedeutende Rolle der Sprache bei der Bewusstseinsbildung schließen: wir wissen nur, was im sprachlichen Begriffssystem verarbeitet wurde.

Bewusstsein ist also eine komplexe Struktur, die durch das Zusammenspiel neuronaler Strukturen und der Hemisphären entsteht, deren Grundlage die Sprache ist. Perspektiven für das Studium des Bewusstseins umfassen Methoden zur Bestimmung der Bewusstseinspräsenz bei komatösen Patienten, Bestimmung der Bewusstseinspräsenz bei Tieren, minimale Anzahl von Körperstrukturen (Nervenzentren, Sinnessysteme) und andere.

HUMANES PAPILLOMAVIRUS IN DER ONKOGENESE VON GEBÄRMUTTERHALSKREBS

Sheltotschenko V. S. - die Studentin des 3. Studienjahres
Wissenschaftliche Leiter: Abramkin E.E., Tkatschjowa N. A.

Das humane Papillomavirus (HPV) ist eine weltweit äußerst häufige sexuell übertragbare Infektion. Die Besonderheit dieser Infektion ist, dass sie sich jahrelang nicht manifestieren kann, aber schließlich zur Entwicklung von gutartigen (Papilloma) oder bösartigen (Gebärmutterhalskrebs) Genitalerkrankungen führen kann.

Bis heute wurden mehr als 300 neue Papillomaviren identifiziert. Vierzehn gut untersuchte HPV-Genotypen (HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66 und 68) gelten als pathogene oder Genotypen mit "hohem Risiko" und verursachen die Entwicklung von Gebärmutterhalskrebs. Chronische Persistenz von HPV 16 und 18 Typen verursacht Gebärmutterhalskrebs in 70-75% der Beobachtungen.

Gebärmutterhalskrebs ist ein bösartiger Epitheltumor, der den vaginalen Teil des Gebärmutterhalses oder den Gebärmutterhalskanal in Form einer exophytischen oder endophytischen Formation betrifft. Die Krankheit nimmt den 6. Platz in der Struktur der Krebserkrankung der weiblichen Bevölkerung Russlands ein (in der Welt – 2. Platz).

Der Prozess der Onkogenese bei Gebärmutterhalskrebs umfasst vier Stufen: HPV-Infektion der zervikalen Transformationszone, Persistenz der Infektion, Erhöhung und Umwandlung von HPV-infizierten Zellen vor der Entwicklung der zervikalen intraepithelialen Neoplasie oder Adenokarzinom, sowie Progression in invasiven Krebs. Kleinere Zellanomalien, wie atypische Plattenepithelveränderungen von unklarer Bedeutung, Plattenepithelveränderungen von niedrigem Grad oder atypische Drüsenveränderungen von Zellen von unbestimmtem Wert in zytologischen Abstrichen können innerhalb weniger Monate nach einer HPV-Infektion beobachtet werden. Bei vorzeitiger Behandlung in 40%-50% der Fälle kann es zu Gebärmutterhalskrebs innerhalb von 5-30 Jahren kommen.

Derzeit gibt es eine primäre und sekundäre Prävention von Gebärmutterhalskrebs: die primäre Prävention umfasst die Impfung zur Prävention von HPV - Infektionen von Mädchen im Alter von 9 bis 18 Jahren vor dem Beginn des Sexuallebens; die sekundäre Prävention, deren Hauptaufgabe ist es, präkanzeröse Läsionen des Gebärmutterhalses zu identifizieren, durch Screening – HPV - Tests.

Gebärmutterhalskrebs kann geheilt werden, wenn es früh diagnostiziert und sofort mit der Behandlung begonnen wird.

Daher sollten Maßnahmen durchgeführt werden, um Patienten über die Bedeutung des Besuchs der gynäkologischen Abteilung mindestens 1 Mal pro Jahr zu informieren, um die Motivation zu erhöhen, an Aktivitäten zur Früherkennung von bösartigen Tumoren teilzunehmen. Ein wichtiger Aspekt ist die Notwendigkeit, die Bevölkerung über die Bedeutung der HPV-Impfung zu informieren.

ANATOMIE DES SEHORGANS

Rudych S.- die Studentin des 1. Studienjahres
Wissenschaftliche Leiter: Pawlowa A. E., Tkatschjowa N. A.

Die Entwicklung des menschlichen Sehorgans beginnt bereits in der zweiten Woche des embryonalen Lebens und setzt sich nach der Geburt fort. Der Augapfel eines Neugeborenen hat eine Form, die sich der Kugelförmigen nähert.

Die vordere und hintere Größe des Auges des Neugeborenen beträgt 16,2 mm, bis zu 1 Jahr - 19,2 mm, in 3 Jahren - bis zu 20,3 mm, bis zu 11 Jahren - bis zu 22 mm, bis 20 Jahre - 24 mm. Neugeborenes Auge Gewicht - 3 g, erwachsene - 7 - 8 g.

Außere hülle des Sehorgans
Die äußere Hülle oder fibröse Kapsel des Auges ist stark, dicht und rigid.
5/6 davon ist die Sklera - der undurchsichtige Teil;
1/6 davon ist die Hornhaut - der transparente Teil.
Funktionen der Faserschale:
- schützende Rolle;
- sorgt für Konsistenz der Augenform;
- die Augenmuskeln sind daran befestigt;
- beteiligt sich an der Aufrechterhaltung des Ophthalmotonus.

Hornhaut (Cornea) - bei einem Neugeborenen ist die horizontale Größe durchschnittlich 9 mm, bei einem Erwachsenen betragt sie etwa11 mm. Die Vergrößerung der Hornhaut erfolgt durch Dehnung und Ausdünnung des Gewebes. Die Brechkraft der Hornhaut des Neugeborenen ist 45,0 D, der Erwachsenen - etwa 40,0 D. Die Hornhaut ist die mächtigste optische Umgebung des Auges.
Hornhaut hat 5 Schichten:
1.vorderes Epithel (flach, mehrschichtig) - ist eine Fortsetzung der Bindehaut;
2. Die vordere Grenzmembran (Bowmen-Hülle) ist mit der basalen Epithelschicht verbunden.
3. Stroma (eigene Substanz)
4. Hintere Grenzmembran (Deszemetov Shell)
5. Endothel (innere Hornhaut)
- die Dicke bis zu 0,05 mm;
- in die Vorderkammer des Auges ist gerichtet, mit Augeninnenflüssigkeit gewaschen;
- einreihige Schicht von flachen sechseckigen Zellen, die mit Hilfe von zytoplasmatischen Auswüchsen an der Basalmembran befestigt sind.
- regeneriert schnell;
- führt Barrierefunktion aus;
- beteiligt sich an der Bildung des trabekulären Apparates des Auges;
Zusammensetzung der Hornhaut:
- das Wasser betragt von 80%;
- definitives Kollagen des mesenchemischen Ursprungs - 18%;
- Mucopolysaccharide, Proteine (Albumin, Globulin), Lipide, Vitamine C, B2 und andere.

SLANG ALS PHÄNOMEN DER MODERNEN DEUTSCHEN SPRACHE

Kapustina.Ju. - die Studentin des 4. Studienjahres
Wissenschaftlicher Leiter: Tkatschjowa N.A.

Der deutsche Jugend-Slang ist ein obszönes Vokabular, das an der Grenze liegt oder sogar über das literarische Deutsche hinausgeht. Slang im Deutschen wird als Jugendliche genannt, weil die Hauptquelle seiner Bildung gerade die Sprache der deutschen Jugend ist. Es ist unter den Jugendlichen, dass die meisten neuen Wörter und Ausdrücke geboren werden. Slang ist auch eine Möglichkeit, junge Menschen auszudrücken, sowie eine Möglichkeit, die Bedeutung des Gesprochenen vor den "Fremden" Menschen um sie herum zu verbergen.
Eigenschaften der deutschen Sprache - häufige Verwendung solcher Wörter und ihrer Derivate wie: Super (der Superpunk-Songs, der Superclub, superböse.); toll (tolleIdeen, tolleBildbände)
- verwenden Sie eine große Anzahl von "trendy" in der Umgangssprache Worte.
- die Prävalenz der Anglizismen: Look, Party, cool.

– System das Vorhandensein einer reichen Synonyme: für tierisch, teufisch, höllisch, cool, vollmäßig, weltmäßigkonkret, korrekt. Im Sinne von "Super", "Upper class, Nobel, die schönste" sind auch folgende Slangismen: fett, analog, aldi, fundamental, gültig, symreal, tiffig, ultimativ.
– die Bildlichkeit der sprachlichen Mittel, manifestiert sich in: Kurzschluss der Slangismen: der Dossi – der Langschläfer, der Träumer, der Phantast.
Wiederholungen: der Blubber-Blubber - das Gerede, die Redere.
reim: Ende im Gelände – без понятия (неизвестно, что происходит и что надо делать).

Alliterationen: flippen – floppen – flappen – weinen
Ungewöhnliche Klangkombinationen: hoppel dihopp – in einem Augenblick.
Wortspiel: Lieber neureich als nie reich! Lieber Kiss in der Tasche als Sand im Getriebe.

Die Namen der Staaten, ihre historischen Gebiete, Städte: kleiner Tiger (небольшая территория и большая экономическая мощь) – Singapur
Namen von Nationalitäten: Ikeakind-der Schwede.
Ironische Phrasen und Ausdrücke: Hotel Mama – das Leben mit den Eltern; Gymnastiker-Anstalt – das Gymnasium.
- Die Anwesenheit von Wörtern, territorial und sozial begrenzter: die Pinte – das Lokal zweifelhaften Rufes (юго-западная Германия, Швейцария)
Beispiele für Slang: Das passt schon! — Сойдет!; Das Wetter ist heute total beschissen. — Погода сегодня совершенно отвратительная; Ich bin so sauer! — Я так зол!; Das ist abgefahren! — С ума сойти!; Heraus damit! — Выкладывай! Говори же!
Fazit: Bei der Bildung von Slengizmen sind Elemente verschiedener Vokabeln, Fremdwörter, Professionalität, Vulgarismen, Jargonismen und sogar Schimpfwörter im Kurs. Wie aus der Theorie der Slangfunktion ersichtlich ist, spielt es eine multifunktionale Rolle. Dies sorgt für einen lebendigen Sprachwechsel, der Worte mit Gefühlen und Bedeutung füllt.

AVITAMINOSE

Sat A.– die Studentin des 2. Studienjahres
Wissenschaftliche Leiter: K. m. W. Etmanowa L. J.; Tkatschjowa, N.A.

Avitaminose ist das völlige Fehlen eines oder mehrerer Vitamine im menschlichen Körper.

Ursache. Die Hauptursache der Avitaminose ist eine unausgewogene Ernährung, wodurch eine Person die notwendigen Vitamine nicht erhält. Die anderen Ursachen für Vitaminmangel sind in den folgenden Gruppen zusammengefasst.

Erbfaktor. Angeborene Formen der Hypovitaminose, die durch genetische Mutationen verursacht werden. Sie können den Austausch von fettlöslichen Vitaminnährstoffen sowie Folsäure, Verbindungen der Gruppe B – B1, B2, B6, B12 beeinflussen. Anzeichen des Zustands manifestieren sich in der Kindheit, seine Korrektur ist schwierig.

Verdauungsstörung. Malabsorption von Vitaminen wird bei chronischer Gastroenteritis, Morbus Crohn, Zöliakie, anderen Krankheiten beobachtet. Die Symptome manifestieren sich in verschiedenen Stadien – Verdauung, Freisetzung von Nährstoffen, Absorption von fertigen bioaktiven Formen.

Störungen des Zellstoffwechsels. In Abwesenheit bestimmter Enzyme ändert sich der Verlauf der intrazellulären biochemischen Prozesse, was zur Unfähigkeit der Verbindung führt, sich in eine aktive Form zu verwandeln, oder «schaltet» den Nährstoff aus metabolischen Reaktionen, provoziert das Auftreten entsprechender Merkmale.

Antivitamine. So nennt man Verbindungen, die strukturelle Ähnlichkeiten mit Vitaminen haben, aber ihre Funktionen nicht erfüllen (zum Beispiel Sulfonamide, Isoniazid, Methotrexat). Zu

dieser Gruppe gehören auch Substanzen, die nützliche Nährstoffe binden oder zerstören können — Thiaminasen, die Vitamin B1 deaktivieren, Eiweiß Avidin, das die Funktionen von Biotin verletzt.

Klinische Manifestationen. Avitaminose wird am häufigsten in Verletzungen der Augen und Vision (die sogenannte «Hühnerblindheit» - schlechte Sicht in der Dämmerung und Dunkelheit), schuppige trockene Haut ausgedrückt.

B-Vitaminmangel stört vor allem das Nervensystem. Eine Person leidet an Kopfschmerzen, Schlaflosigkeit, Gedächtnisstörungen, Störungen der Bewegungskoordination, Depressionserscheinungen am häufigsten.

Mangel an Vitamin C kann sich in Anämie und der damit verbundenen Blässe, Schwäche manifestieren. Das Zahnfleisch beginnt manchmal bluten, oft gibt es Schwere und Schwellungen der Beine. Bei schwerem Mangel an diesem wichtigen Vitamin im Körper kann sich Skorbut entwickeln.

D-Vitaminmangel (die im Körper unter dem Einfluss von Sonnenlicht synthetisiert wird) wird durch erhöhte Reizbarkeit, Schlafstörungen, Herzklopfen, unähnliches Schwitzen ausgedrückt.

HYPOTHYREOSE

Spilewaja A. – die Studentin des 2. Stuienjahres
Wissenschaftliche Leiter: Abramkin E. E., Tkatschjowa N. A.

Hypothyreose ist eine Unterfunktion der Schilddrüse. Es bedeutet, dass Hormone nicht in ausreichender Menge produziert kann. Menschen leiden an dieser Krankheit, wenn sie zu wenig Schilddrüsenhormone im Blut haben. Häufige Ursachen sind Autoimmunerkrankungen wie Hashimoto-Thyreoiditis, chirurgische Entfernung der Schilddrüse und Strahlentherapie.

Aufgrund der subtilen Anzeichen und Symptome einer Hypothyreose ist die Liste der Differentialdiagnosen umfangreich. Diese Diagnose basiert auf Anzeichen und Symptomen; Müdigkeit kann beispielsweise auf Eisenmangelanämie, Schlafapnoe, Depressionen und rheumatologische Erkrankungen hinweisen. Die Differentiale müssen möglicherweise die folgenden Störungen berücksichtigen:

Euthyreoid-Syndrom; Kropf; Myxödemales Koma; Anämie; Ridel-Thyreoiditis; Subakute Thyreoiditis; Schilddrüsen-Lymphom; Jodmangel; Addison-Krankheit; Chronisches Müdigkeitssyndrom; Depression; Dysmenorrhoe; Erektile Dysfunktion.

Dermatologische Manifestationen: Schwellung des Gesichts; Myxödem; seltene, harte und trockene Haare; raue, trockene, dicke Haut mit Peeling; Carotinämie, besonders auffällig an den Handflächen und Sohlen, Macroglossia (Zunahme und Verdickung der Zunge).

Ophthalmologische Manifestationen: periorbitale Schwellung (Schwellung der Augenlider), hängende Augenlider.

Herz-Kreislauf-Manifestationen: verlangsamte Herzfrequenz, vergrößertes Herz während der Untersuchung und Bildgebung (teilweise aufgrund der Dilatation, aber hauptsächlich aufgrund der exsudativen Perikarditis). Andere Manifestationen: Pleuraerguss oder Bauchergуss (Pleuraerguss entwickelt sich langsam und verursacht nur in seltenen Fällen Atemnotsyndrom oder hämodynamische Störungen), raue Stimme und langsame Sprache.

DIE GESCHICHTE DER PÄDIATRISCHEN FAKULTÄT DER AMURER MEDIZINISCHEN AKADEMIE

Chawaa A.- der Schtudent des 4. Studienjahres
Wissenschaftliche Leiter – Prof. Pawlenko W.I., K.m.W., Shamraewa V.W., Tkatschjowa N.A.

"Kinder sind die Blumen des Lebens, die mit gesenktem Kopf geboren werden."
Antoine de Saint-Exupery.

Der Definition des Begründers des russischen Kinderarztes S.F. Hotowitsky nach ist die Pädiatrie (1847) "eine Wissenschaft über die Besonderheiten in der Struktur, Funktionen und Krankheiten des kindlichen Körpers und basiert auf Erhaltung der Gesundheit und Behandlung von Krankheiten bei Kindern."

Die Fakultät fur Kinderheilkunde Amurer Staatlichen medizinischen Akademie (fruher Blagoweschtschensker medizinisches Institut) begann ihre Tätigkeit in 1988 und hat nach 4 Freigabe von Spezialisten in der Fachrichtung "Kinderarzt" die Tätigkeit eingestellt. Damals war das Dekanat auf Inneremedizin und Pädiatrie nicht geteilt und die allgemeine Leitung des Instituts gehörte einem Dekan, Doktor der medizinischen Wissenschaften Professor Gordienko Viktor Petrowitsch, der Leiter der Abteilung für Strahlendiagnostik und Strahltherapie. Die Grundausbildung der zukünftigen Kinderärzte fand in der Abteilung für Kinderkrankheiten unter der Leitung des Professors Albina Fedorowna Babzewa statt. Seit 1996 wutde die Arbeit der Fakultät auf 7 Jahre ausgesetzt.

Seit 2003 hat die Fakultät fur Kinderheilkunde Amurer Medizinischen Akademie wieder ihre Arbeit aufgenommen. Der Dekan, der an den Ursprüngen der pädiatrischen Fakultät stand, war Natalia Viktorovna Klimowa, K.m.W, Assistentprofessor des Lehrstuhls für Pädiatrie der Fakultät für Weiterbildung und berufliche Umschulung von Spezialisten. Sie war als Leiter des Dekanats bis 2008. Vom 2008 bis 2013 leitete das Dekanat für Pädiatrie Professor Viktoria Wladimirowna Shamrajewa, Kandidat für medizinische Wissenschaften. Jetzt leitet das Dekanat der Fakultät für Kinderheilkunde der Doktor der medizinischen Wissenschaften, Professor des Lehrstuhls für Fakultäts- und Poliklinіktherapie Walentina Iwanowna Pawlenko.

Gleichzeitig entstand auch die Notwendigkeit, ein neues Profil der Graduiertenabteilung der Pädiatrischen Fakultät zu schaffen. So wurde im 2006 der Lehrstuhl für Pädiatrie gegründet, die Elena Borisowna Romanzowa, der Doktor der medizinischen Wissenschaften, Professor, geleitet hat. Seit 2017 bis heute ist der Leiter des Lehrstuhls fur Kinderheilkunde der Kandidat der Medizinwissenschaften, Professor Viktoria Wladimirowna Schamrajewa.

Heute studieren an der Fakultät mehr als 258 Studenten. Die Vorbereitung in der Fachrichtung Pädiatrie erfolgt an 23 Abteilungen der Staatlichen medizinischen Akademie des Gesundheitsministeriums, deren Profil die Pädiatrie ist. Von großer Bedeutung in der Ausbildung von Fachärzten sind die Abschlussabteilungen: der Lehstul für Kinderheilkunde, der Lehstul für Geburtshilfe und Gynäkologie, der Lehstul für Krankenhauschirurgie mit dem Studiengang Kinderchirurgie, der Lehstul für Infektionskrankheiten mit Epidemiologie und Dermatowenerologie. Die Bildungsaktivitäten der Fakultät werden auf der Grundlage der aktuellen Hochschulbildungsstandarten durchgeführt. Dauer der Beherrschung des Bildungsprogramms in der Fachrichtung „Pädiatrie“ beträgt 6 Jahre. Nach dem erfolgreichen Bestehen der staatlichen Abschlusszertifizierung erhalten die Absolventen die Qualifikation "Kinderarzt".

Während der Tätigkeit der Fakultät Kinderheilkunde von 2009 bis 2021 wurden 474 Kinderärzte ausgebildet. Nach den Ergebnissen der Abschließenden staatlichen Zertifizierung wurde die durchschnittliche Punktzahl innerhalb der 13 Jahren unter 4,1 Punkte nicht gesenkt. 68 Absolventen erhielten ein Diplom mit Auszeichnung! Fünf Absolventen wurden mit der Medaille „Der beste Student der ASMA“ ausgezeichnet. Das waren: 2017 - Epifanzewa Viktoria, 2018 -

Juretschko Oxana, 2019 - Parshakow Dmitrij, 2020 - Doroshkowa Elizaweta, 2021- Dzjuban Maria. Alle Absolventen wurden als Ärzte verschiedener Fachrichtungen tatig. Sie sind von den Küsten Sachalins und Kamtschatkas bis Moskau, St. Petersburg und Kaliningrad beschäftigt. Wir sind sehr stolz auf unsere Absolventen!

DIE KÜNSTLICHE ERNAHRUNG UND IHRE WIRKUNG AUF DEN KÖRPER DES BABYS IM ERSTEN LEBENSJAHRES

Jasykowa D. – die Studentin des 3. Studienjahres
Wissenschaftliche Leiter: Shurawlewa O.V., Tkatschjowa N.A.

Künstliche Ernahrung ist eine solche Art der Ernährung des Kindes, wenn die Muttermilch entweder vollständig fehlt, oder ihr Anteil ist weniger als 1/5 der täglichen Ernährung des Kindes, und als Ersatz der Muttermilch werden künstliche angepasste Mischungen verwendet. Jeder weiß, dass die Hauptnahrung des Babys im ersten Lebensjahr Muttermilch ist. Oft ist eine junge Mutter aus irgendeinem Grund gezwungen, ihr Kind mit künstlichen Mischungen zu ernahren. Die Übertragung des Kindes auf künstliche Ernahrung, besonders in den ersten Lebensmonaten, ist für ihn eine Art «metabolischer Stress». Mögliche Gründe für die Übertragung des Kindes auf künstliche Ernahrung sind sowohl medizinische Kontraindikationen als auch die persönliche Vorliebe der Mutter. Vor dem Übergang zur künstlichen Ernahrung ist es notwendig, einen Kinderarzt zu konsultieren. Es muss daran erinnert werden, dass dies ein wichtiger und verantwortungsvoller Schritt ist. Der Spezialist wird Ihnen raten, wie Sie dies so schmerzlos wie möglich für das Kind tun können und Ihnen helfen, je nach Alter, den Eigenschaften der Entwicklung des Babys eine geeignete Mischung zu wählen. Der Übergang erfolgt reibungslos und ersetzt allmählich die Stillzeit durch die Flaschenernahrung.

Kinderärzte der ganzen Welt bemerken die negativen Auswirkungen der künstlichen Ernahrung auf den Körper von Kindern des ersten Lebensjahres, so ist zum Beispiel das Hauptproblem von künstlichen Kindern eine verminderte Immunität. Stillen, im Gegensatz zu künstlichen, unterstützt die Immunität und verhindert die Entwicklung von allergischen Erkrankungen. Künstliche Fütterung ist sehr oft mit Verdauungsproblemen verbunden.

Die Wissenschaftler der ganzen Welt weisen darauf hin, dass das Auftreten verschiedener Krankheiten bei Kindern und die künstliche Ernahrung direkt miteinander verbunden sind. Wenn das Baby also noch künstlich ernahrt wird, müssen Sie seiner Gesundheit maximale Aufmerksamkeit schenken. Wenn es Zweifel gibt, ob es sich lohnt, ein Lebensjahr für das Stillen zu verbringen, möchte ich, hoffe ich, dass Mütter zu dem Schluss kommen: Für die Gesundheit des Babys ist Muttermilch das Wichtigste, das durch nichts ersetzt werden kann.

«KLEE-KRANKHEIT» ALS FOLGE DER EMPFINDUNG VON ENDOGENEN ÖSTROGENEN

Rudych S.- die Studentin des 1. Studienjahres
Wissenschaftliche Leiter: Feoktistowa N.A., Tkatschjowa N. A.

Die Wirkung von hormonähnlichen Verbindungen pflanzlichen Ursprungs auf die Fortpflanzungsfunktion wurde aus der tierärztlichen Praxis bekannt. 1946 wurde bei australischen Schafen, die auf kleereichen Weiden der Klee der Art Trifolium subterranium grasen, ein Zustand beschrieben, der als «Klee-Krankheit» bezeichnet wurde und durch eine Verletzung der Eierstockfunktion und einen starken Rückgang der Fruchtbarkeit bis hin zur Unfruchtbarkeit gekennzeichnet war. «Klee Krankheit» wurde mit der Anwesenheit von Klee in der Nahrung von

Tieren verbunden, die reich an Coumestrol und einigen Isoflavonoiden ist, die 5% der Trockenmasse dieser Pflanzenart ausmachen.

Später wurden die Symptome der «Klee-Krankheit» bei Vieh, Kaninchen und einigen Hirscharten beschrieben. Bei weiblichen Tieren, die sich mit Pflanzen futtern, die reich an Isoflavonoiden sind, gab es Anzeichen einer Stillzeit außerhalb der Schwangerschaft. Im Mechanismus der beschriebenen Störungen ist die Hauptrezeption von endogenen Östrogenen hormonempfindlichen Zellen des Hypothalamus, aufgrund der intensiven Bindung an sie Phytoöstrogene.

Die tatsächlichen Daten über die Auswirkungen der Nahrungsaufnahme reich an Phytoöstrogenen auf die menschliche Fortpflanzungsfunktion sind nicht zahlreich. Eine Person erhält Phytoöstrogene in der Zusammensetzung von Getreide, Hülsenfrüchten, in der Zusammensetzung einiger Gemüse und Getränke.

Die Ergebnisse der Forschung zeigen, dass Phytoöstrogene in der Lage sind, spezifische Reaktionen von Geweben von Zielorganen zu modulieren und somit die Rezeptionsproduktion und den Stoffwechsel von endogenen Hormonen sowie ihre Wirkung auf zellulärer Ebene zu beeinflussen. In diesem Fall können Phytoöstrogene als Agonisten und Antagonisten der körpereigenen Östrogene fungieren. Die Ausrichtung der biologischen Wirkung von Phytoöstrogenen hängt vor allem von ihrer Konzentration ab. Je höher ist es, desto ausgeprägter ist die antiöstrogene Wirkung.

Phytoöstrogene haben auch eine Antitumorwirkung. Epidemiologische und experimentelle Daten ermöglichen es, den Gehalt an Phytoöstrogenen in der Ernährung mit der Häufigkeit von hormonabhängigen Tumorprozessen zu verknüpfen. Die Bedingungen und die genauen Mechanismen der Wirkung von Phytoöstrogenen auf die Entwicklung von Tumoren und anderen pathologischen Prozessen, sowie ihre Rolle in der Funktion des Fortpflanzungssystems, sind nicht vollständig klar. Dies erlaubt es nicht, die Methoden der Therapie der hormonabhängigen menschlichen Pathologie, einschließlich Tumoren, mit Phytoöstrogenen weit zu verwenden

BINOKULARSEHEN

Iwantschenko M.W. - die Studentin des 2.Studienjahres
Wissenschaftlicher Leiter: Doz. Pawlowa A. E., Tkatschjowa N.A.

Binokulares Sehen entwickelt sich später als andere visuelle Funktionen. Seine Besonderheit besteht in einer genaueren Bewertung der dritten räumlichen Dimension - der Tiefe des Raumes.

Bei der Geburt hat das Kind keine bewusste Vision. Unter dem Einfluss vom hellen Licht verengt sich seine Pupille, die Augenlider schließen sich, der Kopf lehnt sich zurück, aber die Augen wandern ziellos unabhängig voneinander.

Nach 2-5 Wochen der Geburt veranlasst starkes Licht das Baby bereits, die Augen relativ ruhig zu halten und die Lichtoberfläche genau zu betrachten.

Am Ende des ersten Lebensmonats verursacht die optische Reizung der Peripherie der Netzhaut eine Reflexbewegung des Auges, wodurch das Lichtobjekt vom Zentrum der Netzhaut wahrgenommen wird. Diese zentrale Fixierung erfolgt zunächst flüchtig und nur auf einer Seite, aber allmählich wird sie im Zusammenhang mit der Wiederholung stabil und bilateral. Die ziellose Wanderung jedes Auges wird durch eine konsistente Bewegung beider Augen ersetzt. Die physiologische Grundlage des binokularen Sehens wird gebildet.

Im Laufe von 2 Monaten des Lebens beginnt das Kind, den nahen Raum erkunden. In der ersten Zeit sind nahe Objekte in zwei Dimensionen (Höhe und Breite) sichtbar, aber dank der Berührung sind sie in drei Dimensionen (Höhe, Breite und Tiefe) spürbar. Erste Vorstellungen über die Voluminosität der Objekte werden gelegt.

Im vierten Monat entwickelsich bei den Kindern einen Greiffreflex. Dabei bestimmen die meisten Kinder die Richtung der Gegenstände richtig, aber die Entfernung wird falsch eingeschätzt. Das Kind irrt sich auch bei der Bestimmung der Voluminosität von Objekten: es versucht, Sonnenstrahlen und bewegte Schatten zu erfassen.

Von der zweiten Lebenshälfte ab beginnt die Erschließung des Fernraums. Die dreidimensionale Wahrnehmung des Raumes wird gewährleistet. Der Orientierungsmechanismus im Raum geht über das visuelle System hinaus und ist das Produkt komplexer Gehirnaktivität. In diesem Zusammenhang ist die weitere Verbesserung der räumlichen Wahrnehmung eng mit der kognitiven Aktivität des Kindes verbunden.

Signifikante qualitative Veränderungen in der räumlichen Wahrnehmung treten im Alter von 2-7 Jahren auf, wenn das Kind die Sprache beherrscht und wird sich abstraktes Denken entwickelt. Die visuelle Bewertung des Raumes wird auch im höheren Alter verbessert.

In der weiteren Entwicklung der visuellen Empfindungen des Kindes nehmen sowohl angeborene Mechanismen teil, die entwickelt und fixiert sind, als auch Mechanismen, die im Prozess der Akkumulation von Lebenserfahrungen erworben wurden.

DIE VERÄNDERUNG DER LEBERTRANSAMINASEN BEI DER EINNAHME VON FLUKONAZOL

Iwanowa D.- die Studentin des 2. Studienjahres
Wissenschaftliche Leiter – Etmanowa L. Ja., Tkatschjowa N.A.

Antimykotika sind Medikamente mit spezifischer Wirkung gegen mikroskopisch kleine Pilze. Sie weisen systemische Antimykotika und Antimykotika zur topischen Anwendung zu. Ein typischer Vertreter der Gruppe der systemischen Azole ist Flukonazol, ein weitverbreitetes Antimykotikum gegen systemische Mykosen. Es ist hepatotoxische Wirkung des Arzneimittels bekannt. Die Stadien der Bildung toxischer Metaboliten in den Hepatozyten umfassen: direkte toxische Wirkung; Schädigung der Zellmembran mit anschließender Lyse; beeinträchtigte Ausscheidung von Arzneimittelmetaboliten in der Galle; Aktivierung des Immunsystems mit der Entwicklung von immun-entzündlichen Reaktionen. Das Ergebnis dieser Störungen ist die Zellapoptose. Bei Leberschäden (Hepatitis, Hepatose) als Folge einer Nekrose von Hepatozyten gelangen Enzyme - Transaminasen in den Blutkreislauf, der durch einen Anstieg ihrer Indikatoren gekennzeichnet ist.

Transaminasen sind katalytisch perfekte Enzyme aus der Gruppe der Transferasen, die den intermolekularen Transfer einer Aminogruppe von einer Aminosäure auf eine alpha-Ketosäure katalysieren, ohne dass Ammoniak als Zwischenprodukt entsteht. Die größte klinische Bedeutung haben ALT (Alanin-Aminotransferase) und AST (Aspartat-Aminotransferase).

Bei Studien an Ratten einschließlich oraler Verabreichung einer Suspension von Flukonazol (500 mg/kg) in Ethylalkohol 40% (1 ml) wurde ein Anstieg der Lebertransaminasen festgestellt. Im Durchschnitt wird eine Erhöhung der AST um 4,4 U/L, eine Erhöhung der ALT um 1,5 U/L nach 21 Tagen des Experiments mit der Häufigkeit der Verabreichung der Suspension alle zwei Tage bemerkt.

Aus den erhaltenen Ergebnissen wir können über erhöhte Aktivität von Aminotransferasen schlussfolgern, dass auf pathologische Prozesse im Leberparenchym während der Einnahme von Flukonazol hinweist. Die Wahrscheinlichkeit einer Leberschädigung hängt von begleitenden Stoffwechselstörungen, von der Dosierung und Dauer der Arzneimitteleinnahme sowie von der Kombination von Flukonazol mit anderen Arzneimitteln in einer komplexen Therapie ab. Die Hepatotoxizität ist reversibel; um die Reversibilität zu beurteilen, ist eine dynamische Überwachung des für diese Pathologie spezifischen Transaminasenspiegels erforderlich.

VERDIENTE ÄRZTE – DIE LEHRER DER AMURER STAATLICHEN MEDIZINISCHEN AKADEMIE

Tabakaewa T. - die Studentin des 4. Studienjahres
Wissenschaftlicher Leiter: Tkatschjowa N.A.

In Amurer Staatlichen Medizinischen Akademie, der ehemaligen BSMI, haben in ihrer Geschichte nicht wenige Ärzte unterrichtet. Ihre berufsärztliche Tätigkeit ist mit der pädagogischen Tätigkeit verbunden. Das waren wissenschaftliche Leiter, Organisatoren verschiedener medizinischer Dienste usw. Ich werde Ihnen nur einige von ihnen vor stellen.

Sergei Grigorjewitsch Ptizyn, Dozent. Er war fünf Jahre als Rektor tatig. Er musste klinische Abteilungen bilden, ein Konzept für die Entwicklung des Instituts erstellen. Therapeut von Beruf, Frontsoldat, Ordenträger wurde mit fünf Kampfpreisen ausgezeichnet.

Professor Boris Lwowitsch Bronstein war als Vertreter der Leningrader Onkologie-Schule, erster Leiter der Abteilung für Allgemeine Chirurgie. „Brillanter“ Chirurg, Autor der ersten Monographie der UdSSR „Darmkrebs“, wurde er Organisator der wissenschaftlichen chirurgischen Gesellschaft desAmurgebiets.

Professor Michail Weniaminowitsch Mogilew kam aus Leningrad nach Blagoweschtschensk und organisierte die Abteilung für Geburtshilfe und Gynäkologie. Er war Schöpfer des wissenschaftlichen klinischen geburtshilflichen und gynäkologischen Dienstes des Amurgebiets.

Professor Herman Jakowlewitsch Liberzon war ein großartiger Organisator der Abteilung für Nervenkrankheiten.

Professor Jaroslaw Petrowitsch Kulik kam aus Smolensk, wo er als Herzchirurggearbeitet hat. In Blagoweschtschensk hat er einen spezialisierten herzchirurgischen Dienst eingerichtet. Hier hat er chirurgische Korrekturoperationen mit angeborenen und erworbenen Herzfehlern durchgefuhrt.

Professor Iwan Iwanowitsch Ostrowski war ein HNO-Arzt, der als einer der ersten mikrochirurgische Operationen an Hörknochen durchgeführt hat.

Das Ehepaar von Professoren sind Landyschewa Iraida Wassiljewna und Jurij Sergejewitsch. Die Absolventen des medizinischen Instituts in Tomsk gründeten sie eigene wissenschaftliche Schulen für Kardiologie und Pulmonologie. Als Anhänger der medizinischen Elite von Tomsk bildeten sie um sich herum Kollektive gleichgesinnter Menschen, die sich der Arbeit von Klinikern, Patienten und der Wissenschaft widmeten.

Es waren nut einzige Namen von Arzten genannt, die medizinische und pädagogische Tätigkeit vereinigen. Heute sind auch nicht wenige Ärzte in den Abteilungen der Amurer Staatlichen Medizinischen Akademie tatig. Sie teilen ihre Erfahrungen mit den Studierenden und helfen sie mit zukünftiger Fachrichtung in der Medizin entscheiden.

NEUROMUSKULÄRE SYNAPSE

Bykowskij P. – der Student des 2. Studienjahres
Wissenschaftliche Leiter: I.W. Siyanowa, N. A. Tkatschjowa

Die neuromuskuläre Synapse (auch neuromuskuläre oder myoneurale Synapse) ist ein Nervenende auf der Skelettmuskelfaser. Es ist Teil der neuromuskulären Spindel. Der Neurotransmitter in dieser Synapse ist Acetylcholin.

In dieser Synapse verwandelt sich der Nervenimpuls in eine mechanische Bewegung des Muskelgewebes.

Struktur

Der Nervenfortsatz verliert bei der Annäherung an Sarkolemma Myelinscheide und bildet eine komplexe Apparate mit plasmatische Membran der Muskelfaser, die von Vorsprüngen aus Axon und

Zytolemmen der Muskelfaser gebild wird, schafft tiefe «Taschen». Die synaptische Membran des Axons und die postsynaptische Membran der Muskelfaser sind durch einen synaptischen Schlitz getrennt. In diesem Bereich hat die Muskelfaser keine transversale Erschöpfung und wird durch eine Ansammlung von Mitochondrien und Kernen gekennzeichnet. Axon-Terminals enthalten eine große Anzahl von Mitochondrien und synaptischen Blasen mit dem Mediator Acetylcholin.

Morphologie der Synapse

Motorische Nervenenden in glatten Muskelgewebe sind einfacher gebaut: unmyeline Bündel von Axonen dringen zwischen den Glyozyten zu einer Schicht von glatten Muskeln und bilden keulenartige Erweiterungen, die cholinerge und adrenerge Blasen enthalten.

Neuromuskuläre Übertragung Mechanismus

Synapsen sind Kommunikationsstrukturen, die durch das Ende der Nervenfaser und der angrenzenden Membran der Muskelfaser (presinaptische Nerven- und postsynaptische Muskelmembranen) gebildet werden.

Die Hauptstufen der Übertragung der Erregung in der neuromuskulären Synapse sind:

1) Anregung von Motoneuron, Ausbreitung des Wirkungspotentials auf die presinaptische Membran;
2) Erhöhung der Durchlässigkeit der presinaptischen Membran für Calciumionen, Calciumstrom in die Zelle, Erhöhung der Calciumkonzentration im presinaptischen Ende;
3) die Fusion der synaptischen Blasen mit der presinaptischen Membran in der aktiven Zone, Exozytose; Eintritt des Mediators in den synaptischen Schlitz;
4) Diffusion von Acetylcholin zur postsynaptischen Membran, Anbindung an N- cholinerger Rezeptoren, Öffnung chemisch abhängiger Ionenkanäle;
5) der vorherrschende Natriumionenstrom durch chemisch abhängigen Kanäle, die Bildung des inhibitorischen Potentials der Endplatte;
6) Auftreten von Aktionspotentialen auf der Muskelmembran;
7) enzymatische Spaltung von Acetylcholin, die Rückkehr der Spaltprodukte zum Ende des Neurons, die Synthese neuer Portionen des Mediators.

FEHLER UND KOMPLIKATIONEN, DIE BEI DER DURCHFÜHRUNG DER HERZ-LUNGEN-REANIMATION ENTSTEHEN

Krawtschenko A.A. – die Studentin des 2. Studienjahres
Wissenschaftliche Leiter: K.b.W Zaritskaya V. V., Tkatschjowa N.A

Das Erlernen der richtigen Herz-Lungen-Wiederbelebung (HLW) ist für alle Mitarbeiter mit medizinischem Hintergrund wichtig, da die Notfallversorgung zu ihrer Aufgabe gehört.

Das Ziel der Studie ist es, die Fehler und Komplikationen zu untersuchen, die bei der Durchführung einer Herz-Lungen-Wiederbelebung auftreten können.

In der Forschung wurde eine Analyse des theoretischen Materials durchgeführt und die Erfahrungen mit der Durchführung von Reanimationsmaßnahmen untersucht. Derzeit ist in Russland das CPR-Protokoll des Europäischen Rates in der Ausgabe 2015 in Kraft. Die Veröffentlichung des neuesten Protokolls führte zur Anpassung des Ausbildungslehrplans für dringende Aktivitäten in Simulationszentren und anderen Bildungseinrichtungen des Landes. Unter Berücksichtigung der gesammelten Erfahrungen und der Synthese der Ergebnisse wird regelmäßig ein Zwischenkonsens zum HLW-Protokoll veröffentlicht, der letzte wurde 2018 vorgestellt. Es enthält keine grundlegenden Änderungen, der Schwerpunkt liegt nach wie vor auf der Herzdruckmassage und der frühen elektrischen Defibrillation.

Zu den Hauptfehlern bei der Durchführung von Reanimationsmaßnahmen gehören: Verzögerung des Beginns der HLW, Zeitverlust für kleinere diagnostische und therapeutische

Verfahren; Anwesenheit von Unbefugten; falsche Technik zur Durchführung einer geschlossenen Herzmassage; verzögerter Beginn oder Unterbrechungen der Herzdruckmassage; falsche Technik der künstlichen Beatmung der Lunge; die späte Einführung des Adrenalins oder die Intervalle während seiner Einführung übertreten 5 Minuten; Verzögerung bei der elektrischen Defibrillation; Nichteinhaltung des empfohlenen Verhältnisses zwischen Kompressionen und Atemzügen 30: 2; fehlende Abrechnung über laufende Aktivitäten, Kontrolle nach Durchführung, Ernennung und Zeit; vorzeitiger Abbruch von Reanimationsmaßnahmen; Schwächung der Kontrolle über den Patienten nach Wiederherstellung der Herzaktivität.

Die häufigste Komplikation der CPR ist eine Brustfraktur. Am häufigsten tritt dies bei übermäßiger Druckkraft mit den Händen auf das Brustbein des Opfers, einem falsch bestimmten Punkt der Position der Hände, erhöhter Brüchigkeit der Knochen auf.

Gründe für die fehlerhafte Umsetzung des HLW-Protokolls unter realen Bedingungen sind: physische und psychische Belastung des Retters, unzureichende Bereitschaft der Retter, unter Stress zu arbeiten, Verlust der manuellen Fähigkeiten bei langen Trainingspausen.

VIRENKRIEG FÜR DEN MENSCH UND SEINE FOLGEN

Merdejew M.- der Student des 1.Studienjahres
Wissenschaftliche Leiter: Prof. E. N. Gordienko, N.A. Tkatschjowa

Relevanz. Das COVID-19-Thema feierte sein zweijähriges "Jubiläum" der beginn der Tragödie am 17.11.2021. Durch die Fortsetzung der Pandemie ergeben sich jedoch viele Probleme. Einer von ihnen ist die Beziehung des SARS-Cov-2-Virus mit der HIV-Infektion, die in der Welt, Amurgebiet, Russland nicht weniger relevant ist.

Laut Weltstatistiken ist die Inzidenz von COVID-19 bei Patienten mit HIV-Infektion nicht sehr hoch. Allerdings gibt es einen längeren und schwereren Krankheitsverlauf. Bei Patienten mit schwerer Immunschwäche treten häufiger extrem schwere Verlaufsformen von COVID-19 auf. Die Sterblichkeit wegen COVID-19 ist achtmal höher als die von Patienten ohne Immunschwäche. In der Situation mit HIV-Infektion und COVID-19 besteht die syndemische Wechselwirkung darin, dass das humane Immunschwächevirus, das die Immunität reduziert, den Körper auf das ungehinderte Eindringen und die Vermehrung des SARS-Cov-2-Virus "vorbereitet", wodurch die Virulenz des Virus erhöht wird. Letzteres ist nicht nur auf die Eigenschaften von Mikroorganismen zurückzuführen, sondern auch auf den Grad der Resistenz des Organismus. Es ist wichtig zu beachten, dass in der Gruppe der Patienten, die keine HIV-Behandlung erhalten, fast die Hälfte der Fälle einen extrem schweren Verlauf von COVID-19 aufweisen. Bei dieser Patientengruppe traten überhaupt keine asymptomatischen und leichten Formen der Coronavirus-Infektion auf. Die Sterblichkeit ist unglaublich hoch - 60%! Dies ist siebenmal höher als in der Gruppe der Patienten, die ART erhalten.

Man kann Slussvolgerungen machen, dass die Sterblichkeit durch COVID-19 bei Patienten mit HIV-Infektion unter ärztlicher Beobachtung stand und es keine antiretrovirale Therapie mit einer Wirksamkeit von 87% sowie eine am Tag der Diagnose der HIV-Infektion verordnete Behandlung gab. Für Menschen, die mit HIV / AIDS leben, ist dies ein sehr wichtiger Faktor, der den Rückgang der Inzidenz beeinflusst. Das Problem der syndemische Interaktion der genannten Viren unterliegt einer weiteren ernsthaften Analyse.

SOZIALE UND HYGIENISCHE ASPEKTE DES GESUNDHEITSSCHUTZES VON MEDIZINERN

Madjarow O. – der Student des 2.Studienjahres
Wissenschaftliche Leiter: K.b.W. Zarizkaja V.V., N.A. Tkatschjowa

Die Dringlichkeit des Problems der Gestaltung des betrieblichen Gesundheitsschutzes wird durch den Einfluss der Arbeitsbedingungen auf den Gesundheitszustand der Ärzte und eine hohe Morbidität bestimmt, die nach Angaben verschiedener Autoren fuhrenden Branchen hinausgeht und von 93,2 bis 114,7 Fälle pro 100 Beschäftigten schwankt.

Das Problem der Organisation eines wirksamen Systems zum Schutz der Gesundheit des medizinischen Personals wird durch das Fehlen eines obligatorischen Systems zur Erfassung von Morbiditätsindikatoren in Gesundheitseinrichtungen bestimmt.

Um Entscheidungen zur Verbesserung der Gesundheit von medizinischem Personal treffen zu können, ist ein wissenschaftlich fundierter Ansatz erforderlich, der auf einer umfassenden sozialhygienischen Analyse von Faktoren, die die Lebensqualität beeinflussen, basiert. Das Ziel dieser Studie ist es in diesem Zusammenhang, Leitlinien für das Gesundheitssystem des medizinischen Fachpersonals wissenschaftlich zu studierenund zu erarbeiten mit anschließender Bewertung der Wirksamkeit.

Die wissenschaftliche Neuheit der Studie wird dadurch bestimmt, dass erstmals eine umfassende Untersuchung der sozialen und hygienischen Aspekte der Gesundheit, des Konfliktniveaus, der Lebensqualität des medizinischen Personals, der wichtigsten Risikofaktoren für die Verschlechterung des Gesundheitszustandes der Beschäftigten ermittelt, Ursache-Wirkungs-Beziehungen von Faktoren und Gesundheitszustand identifiziert sowie Unterschiede in den Gruppen festgestellt, die Unterschiede in den Gruppen von Ärzten und Pflegekräften wurden aufgezeigt, die Wirksamkeit von Maßnahmen zur Verbesserung der Gesundheit des Gesundheitspersonals aufgezeigt.

Die Arbeitsbedingungen des medizinischen Personals, Lebensweise, eine Reihe von sozialen Faktoren bestimmen die Arbeitsmotivation. Die Arbeitszufriedenheit in materieller und psycho-emotionaler Hinsicht bestimmen unter modernen Bedingungen die Muster und Merkmale der Prozesse von Gesundheitsstörungen. Das aktuelle Präventionssystem zielt auf symptomatische Hilfe und Behandlung und sieht keine Verhinderung der Wirkungsrichtung vor. Die in der Arbeit erzielten Ergebnisse zeigen die Aktualisierung des präventiven Ansatzes bei Rehabilitationsmaßnahmen, die Bedeutung von Maßnahmen zur Verbesserung des Lebensstandards des medizinischen Personals, ihrer Entlohnung, der medizinischen Tätigkeit und der Verbesserung der Arbeitsbedingungen bei der Prävention von Gesundheitsstörungen.

Somit wird die Gesundheit von medizinischem Personal in wichtigen medizinischen Fachgebieten von Faktoren und Lebensstilfaktoren beeinflusst.

MODERNE MEDIKAMENTE ZUR BEHANDLUNG VON PARKINSONISMUS

Bondarewa A.S; Sheltotschenko W.S– die Studentinen des 3. Studienjahres
Wissenschaftliche Leiter: K.m.W. Anochina R.A., Tkatschjowa N. A.

Parkinson-Krankheit - chronische progressive Erkrankung des Gehirns, in dem Nervenzellen sammelt sich pathologisches Protein α-Synuklein und bilden spezielle intrazelluläre Einschlüsse - Stier Levi, die den Tod der betroffenen Nervenzellen der schwarzen Substanz verursacht. Die Hauptfunktion dieser Neuronen ist die Produktion von Dopamin, das an der Kontrolle der motorischen Aktivität, des Muskeltonus und der Denkprozesse beteiligt ist. Während dessen manifestiert sich die Krankheit durch eine Triade von Symptomen: Bradykinesie, Tremor, Muskelsteifigkeit.

Die Parkinson-Krankheit bleibt immer noch eine unheilbare Krankheit, die Verhinderung oder Beendigung des pathologischen Prozesses ist nicht möglich. Daher zielen alle verfügbaren Behandlungen darauf ab, die Auswirkungen der Neurodegeneration zu mildern.

Zu den Antiparkinson-Medikamenten, die bei der Parkinson-Krankheit verwendet werden, gehören 6 Gruppen von Arzneimitteln:

1. Medikamente, die Levodopa in Kombination mit Dopa-Decarboxylase–Inhibitoren enthalten, erhöhen die Synthese von Dopamin.
2. Dopamin-rezeptor-Agonisten – direkt stimulieren die Rezeptoren der postsynaptischen Membran von Neuronen, die empfindlich auf Dopamin.
3. Monoaminoxidase-Inhibitoren vom Typ "B" - hemmen den Katabolismus von Dopamin, tragen zur Akkumulation in der synaptischen Spalte bei.
4. Antagonisten von N-Methyl-D-Aspartat (Glutamat) hemmen die umgekehrte Aufnahme von Dopamin durch das presinaptische Ende.
5. Cholinolytike (anticholinerge Mittel) - Verringerung der Aktivität des cholinergen Systems unter den Bedingungen seiner relativen Vorherrschaft über dopaminerge.
6. Katechol-O-Methyltransferase-Inhibitoren (COMT) - Entacaponum (Entacapon) – reduziert den Stoffwechsel von Levodopa im Körper und verlängert seine (therapeutische) Wirkung

Noch vor einigen Jahrzehnten war Parkinsonismus eine nahezu unheilbare Krankheit. Jetzt können wir bereits über eine Reihe von Fortschritten auf diesem Gebiet sprechen.

DIE MEDIZINISCH-BIOLOGISCHEN BESONDERHEITEN DES STUDIUMS DER CHEMIE IN AMURER STAATLICHEN MEDIZINISCHEN AKADEMIE

Rudych S.- die Studentin des 1. Studienjahres

Wissenschaftliche Leiter: K.t.W. Utochkina E. A., Kokina T.W., Tkatschjowa N. A.

Bei der Vorbereitung zukünftiger Mediziner auf die berufliche Tätigkeit spielt die Grunddisziplin «Chemie» eine große Rolle. Das Studium der Chemie weckt das Interesse an chemischen und biologischen Wesen und Mechanismen von Prozessen, die im menschlichen Körper stattfinden. Die Chemie vermittelt das Wissen, das in der Praxis des Arztes notwendig ist.

Die Studenten im 1.Studienjahres studieren biologische System, chemische Gleichgewicht, die Bedingungen der Bildung und Auflösung von Niederschlag, Osmose und osmotischen Druck, der Mechanismus der Pufferwirkung, komplexe Verbindungen, Kolloidal-Dispersionssysteme, Formen von Arzneimitteln (Emulsionen, Suspensionen, Aerosole, Gele), die Beziehung der Struktur und Eigenschaften von organischen Verbindungen, Arten von Konzentrationen von Stoffen in den Lösungen.

Die spezifischen Merkmale des Studiums der Chemie an der medizinischen Universität sind:

- der Zusammenhang zwischen Zielen der chemischen und medizinischen Bildung;
- die Besonderheit des Inhalts der Themen der Disziplin abhängig von der Art und den allgemeinen Zielen der Ausbildung des Arztes und seiner Spezialisierung;
- Einheit der Untersuchung chemischer Objekte auf Mikro- und Makroebenen mit der Offenbarung verschiedener Formen ihrer chemischen Organisation als einheitliches System und ihrer verschiedenen Funktionen, abhängig von ihrer Natur, Umgebung und Bedingungen.

Ohne Wissen der Chemie ist es unmöglich, ein vollwertiges Verständnis zu bilden:

- Wesen und Mechanismen der Wechselwirkung von Substanzen, die im menschlichen Körper auftreten;
- Vorstellungen über die Muster der physikalisch-chemischen Prozesse und Phänomene in verschiedenen physikalisch-chemischen Systemen, auf der Grundlage der grundlegenden

Bestimmungen der Chemie und unter Berücksichtigung der Besonderheiten der Ausbildung eines Spezialisten auf dem Gebiet der Medizin;

- Parameter der physikalisch-chemischen Prozesse und Bewertung dieser Prozesse auf zellulärer und molekularer Ebene.

Die Grundlage des chemischen Wissens, das die Studenten im 1. Studienjahr erhalten haben, ist für sie in der Zukunft notwendig, wenn sie viele theoretische und klinische Disziplinen studieren.

Um interdisziplinäre Beziehungen zu gewährleisten, werden im Rahmen des grundlegenden Teils des Lehrplans parallel mit Disziplinen wie bioorganische Chemie in der Medizin, Physik, Mathematik, Biologie, Anatomie, Geschichte der Medizin, Fremdsprache und Latein studiert.

FIBROADENOM DER BRUST

Gurshabon A. — die Studentin des 3. Studienjahres
Wissenschaftliche Lieter: Abramkin E.E., Tkatschjowa N.A

Fibroadenom (Adenofibrom) ist ein gutartiger Tumor der Brustdrüse, der am häufigsten im Alter von 15-35 Jahren gefunden wird, hauptsächlich (90%) in Form eines einzelnen Knotens.

Makroskopisch ist es wie ein Knoten mit klaren Grenzen, d.h es wächst expansiv. Seine Konsistenz ist dicht. Nach der histologischen Struktur ist es ein tubuläres Fibroadenom. Im Fibroadenom ist Gewebeatypismus ausgedrückt: Die Drüsen bauen keine Läppchen, sie haben unterschiedliche Durchmesser und Formen.

Der Tumor besteht aus proliferierenden Epithelelementen und Bindegewebe. Es gibt perikanalikuläre und intrakanalikuläre Fibroadenome. Die Größe des Tumors ist unterschiedlich - von mikroskopisch bis gigantisch (blattförmiger Brusttumor).

Das perikanalikuläre Fibroadenom ist durch eine konzentrische Proliferation von

Ein blattförmiger Tumor der Brustdrüse (intrakanalikuläres Fibroadenom mit Zellstroma) tritt häufiger bei Frauen im Alter von 40-50 Jahren auf. Es hat eine charakteristische Schichtstruktur, die sich gut von den umgebenden Geweben abgrenzt, aber keine echte Kapsel hat.

Makroskopisch ist der Knoten lobulär mit einem charakteristischen retikulären Muster, das der Struktur eines Blattes ähnelt (daher der Name). Schlitz- und zystische Hohlräume, Nekroseherde und Blutungen sind sichtbar. Schlitz- und zystische Hohlräume, Nekroseherde und Blutungen sind sichtbar.

Mikroskopisch sieht es aus wie ein intrakanalikuläres oder gemischtes Fibroadenom, oft mit zystisch erweiterten Gängen, in dessen Lumen polypoides Bindegewebe wächst, das mit einer oder mehreren Schichten kubischen Epithels bedeckt ist.

Bei einem ausreichend großen Tumor treten Ausdünnung und Zyanose der darüber liegenden Haut auf.

Blattfibroadenom erfährt manchmal eine bösartige Transformation und metastasiert in Knochen, Lunge und andere Organe. Das belaubte Fibroadenom erfährt manchmal eine bösartige Transformation und metastasiert in Knochen, Lunge und andere Organe.

DIE HÄUFIGSTEN ANOMALIEN DES GESICHTS UND DER MUNDHOHLE

Lobassenko K. - Student des 2.Studienjahres
Wissenschaftliche Leiter: Pawlowa A.E., N.A. Tkatschjowa

Entwicklungsanomalien entwickeln sich bei Verletzungen des Lesezeichens, wodurch die Bildung anatomischer Strukturen, der Einfluss endogener Faktoren und eine genetische Veranlagung verletzt werden.

Die häufigsten Anomalien sind:

- "Wolfsmaul" - Spalten des harten und weichen Gaumens (Nichtvereinigung der Prozesse);

- Makrostomie (breiter Mund) - die seitlichen Teile der Oberkieferfortsätze wachsen nicht mit dem Unterkiefer zusammen;

- Mikrostomie (kleiner Mund) - aufgrund übermäßiger Ansammlung von Prozessen;

- "Lippenspalte" - eine seitliche Spalte der Oberlippe (die medialen Nasen- und Oberkieferfortsätze wachsen nicht zusammen; die mediane Oberlippenspalte (die medialen Nasenfortsätze wachsen nicht zusammen);

- Geschlossener Tränennasenkanal (komplette Überwucherung der Tränennasenrinne);

- Zyklopie (Atresie der Lidspalte, Unterentwicklung des Augapfels) verschiedene Fehlbildungen der Nase und der Lippen durch unsachgemäße Bildung und Entwicklung der Nasen-, Ober- und Unterkieferfortsätze.

LYMPHOZYTISCHE CHORIOMENINGITIS

Lylowa E. – die Studentin des 3. Studienjahres
Wissenschaftliche Lieter: Abramkin E.E., Tkatschjowa N.A

Die lymphozytäre Choriomeningitis ist eine Virusinfektion, die von Nagetieren auf den Menschen übertragen wird und von einer vorherrschenden Läsion der Meningen und Gefäßplexus des Zentralnervensystems begleitet wird. Der Erreger von LCM gehört zur Familie der Arenaviridae. Die Krankheit kann von unterschiedlichem Schweregrad sein und von asymptomatischen bis hin zu seltenen Fällen einer tödlichen systemischen Erkrankung reichen. Unter den neurologischen Störungen sind die meningealen Symptome in Form von Kernig- und Brudzinski-Symptomen sowie die Steifheit der Hinterhauptsmuskulatur am häufigsten.

Hauptreservoir des Virus sind graue Hausmäuse, die den Erreger mit Nasenschleim, Urin und Kot ausscheiden. Eine Infektion des Menschen wird normalerweise durch den Verzehr von mit Mäusen kontaminierten Lebensmitteln verursacht. Eine Infektion über die Atemwege ist möglich.

Das Virus verursacht einen Entzündungsprozess in den Membranen mit Exsudation von lymphoiden Elementen, wodurch hauptsächlich Lymphozyten in der Liquor cerebrospinalis erscheinen. Die Entzündungsreaktion der Membranen führt zu einer vermehrten Produktion von Liquor cerebrospinalis, was wiederum eine Erhöhung des Hirndrucks und eine Reihe von damit verbundenen Symptomen verursacht. Die Gefäße von Medulla, Kortex und Rumpf, insbesondere der bulbäre Abschnitt, sind bis zur Stauung überfüllt, die perivaskulären Räume sind vergrößert.

Im Blut wird meist eine Leukopenie nachgewiesen, wobei wir eine leichte Leukozytose und einen Anstieg der ESR nicht ausschließen. Die Flotte ist transparent, der Druck wird deutlich erhöht. Der Protein-, Zucker- und Chloridspiegel im Liquor bleibt normalerweise normal, obwohl ein leichter Anstieg des Protein- und niedrigeren Zuckerspiegels möglich ist.

Detaillierte klinische und virologische Studien an Patienten mit HM durchgeführt von A. G. Panov, A. I. Shvarev und P. I. Remezov, haben gezeigt, dass häufige grippeähnliche Form, Syndrome, Enzephalitis, Enzephalomyelitis, полирадикулоневрита und viszerale Manifestationen der Infektion.

Klinisch wird die Diagnose LCM anhand folgender charakteristischer Zeichen gestellt: akuter Krankheitsbeginn mit Anstieg der Körpertemperatur, Kopfschmerzen, Erbrechen sowie mäßige Entzündungen der oberen Atemwege, meningeale Symptome, lymphozytäre Natur Pleozytose im Liquor cerebrospinalis, ein leichter Anstieg des Proteingehalts und eine Abnahme des Zuckerspiegels, oft Stauung im Fundus, gutartiger Krankheitsverlauf und in der Regel das Fehlen von Resteffekten.

Die ätiologische Diagnose erfolgt durch Isolierung des Virus sowie durch den Nachweis von Antikörpern bei den Reaktionen der Neutralisation und der Komplementbindung.

PATHOMORPHOLOGIE DES SCHILDDRÜSENKREBSES

Oorshak A. – die Studentin des 3.Studienjahres
Wissenschaftliche Lieter: Abramkin E.E., Tkatschjowa N.A.

Schilddrüsenkrebs (TC) ist ein bösartiger Tumor, der sich aus dem Drüsenepithel der Schilddrüse entwickelt. Es gibt eine Reihe von Hauptfaktoren für die Entwicklung von Schilddrüsenkrebs: Hypothyreose, Exposition gegenüber ionisierender Strahlung, das Vorhandensein von neoplastischen Prozessen (Adenomen) im Schilddrüsengewebe, erbliche Syndrome.

Es gibt fünf histologische Typen von Schilddrüsenkarzinomen: papilläre, follikuläre, medulläre, niedrig differenzierte und undifferenzierte Hutle-Cell (anaplastisch).

Schilddrüsenkrebs ist meistens asymptomatisch. In seltenen Fällen stellen sich Patienten mit folgenden Beschwerden vor: das Vorhandensein einer Knötchenbildung an der vorderen oder seitlichen Oberfläche des Halses, Heiserkeit, Dysphagie; man muss die Erblichkeit des Schilddrüsenkrebses berücksichtigen. Ärzte achten häufiger auf die ausgeprägten Anzeichen von Schilddrüsenkrebs: die schnelle Wachstumsrate des Tumors, die Immobilität des Neoplasmas, das Vorhandensein von metastatischen Läsionen. Während dessen entziehen sich die ersten Symptome der Aufmerksamkeit des medizinischen Personals, was die Untersuchung des Patienten verzögert und zu einer unzumutbaren konservativen oder unzureichenden chirurgischen Behandlung führen kann.

Die konservative Behandlung des Schilddrüsenkrebses mit Jodiden und Hormonpräparaten trägt in manchen Fällen zur Verbesserung des Allgemeinzustandes der Patientin bei, führt in manchen Fällen sogar zu einer Verkleinerung des Tumors (in der Regel durch die Elimination von perifokale Entzündung). Dies führt dazu, dass Ärzte und Patienten mit Schilddrüsenkrebs lange Zeit konservativ behandelt werden.

Schilddrüsenpathologien bei Einwohnern der Russischen Föderation sind häufiger geworden und haben sich in den letzten 10 Jahren verdoppelt. In spezialisierten onkologischen Einrichtungen begann die Gruppe der Patienten mit Schilddrüsenkrebs nach nicht-radikalen Primäroperationen zu wachsen, da 90,8 % dieser Patienten in allgemeinchirurgischen Abteilungen und nur 9,2 % in onkologischen Einrichtungen des Landes operieren werden.

ZELLTHEORIE - GESCHICHTE UND NACHFRAGE HEUTE

Rudych S.- die Studentin des 3.Studienjahres
Wissenschaftliche Lieter: Prof. Gordienko E. N., Tkatschjowa N.A.

Die Zelle (lat. cellula) ist ein elementares offenes lebendes System, das mit der Umgebung von Substanz, Energie und Information austauscht. Die Arbeit auf dem Gebiet der Forschung des Zellsystems begann mit 1665 und wird bis heute durchgeführt. Sie hat nicht nur ihre Bedeutung verloren, sondern im Gegenteil, die Zytologie hat sich zu einer mächtigen biologischen Industrie mit vielen Branchen entwickelt. Das Studium der Ursprünge dieser Wissenschaft finden wir in England, Europa: Deutschland, Tschechien, Italien, Frankreich, Holland. Jahrhunderts haben in die Wissenschaft fundiertes Wissen über die Zelle: der englische Wissenschaftler Robert Hooke, italienischer Arzt Marcello Malpighi, der englische Botaniker Nehemiah Grew, Dutch Master Antony Van Leeuwenhoek, der französische Entdecker Charles-François Mirbel, der Tschechische Gelehrte J. Purkyně, der englische Botaniker R. Brown, Deutsche Wissenschaftler Johannes Müller, Zoologe Theodor Schwann und Botaniker Matthias Schieiden, V. Flemming, E. Strasburger, Rudolf Virchow.

Einen bedeutenden Beitrag zum Studium der Zellteilung leisteten die in der wissenschaftlichen Literatur selten erwähnten russischen Wissenschaftler: I. D. Chistyakow, P.I. Permeschko, der Begründer der Zellbiophysik N. K.Koltsow.

Die Zelltheorie ist eine der grundlegenden Ideen der Biologie, hat die Möglichkeit gegeben, die Grundlagen der Chromosomentheorie der Vererbung zu studieren und zu schaffen, die Eigenschaften von DNA, wie Substanzen der Vererbung, Genomik und Transkriptomik von Zellsystemen zu studieren. Es wurde ein unwiderlegbarer materieller Beweis für die Einheit aller Lebewesen und die Grundlage für die Entwicklung von Disziplinen wie Embryologie, Histologie, Zytophysiologie, Zytogenetik. Letzteres entwickelt die Grundlagen für das Studium und die Einführung der Zelltherapie.

Für die Weltwissenschaft, die im 21. Jahrhundert mit einem neuen viralen Angreifer konfrontiert war, ist es äußerst wichtig, die Merkmale seiner Wechselwirkung mit verschiedenen Arten von Zellsystemen des menschlichen Körpers zu kennen, um einen möglichen Schutz zu organisieren.

BIHORN-GEBÄRMUTTER. PATHOLOGIE UND SCHWANGERSCHAFT

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Wissenschaftliche Lieter: Abramkin E.E, Tkatschjowa N.A.

Der Uterus ist das Muskelorgan des Fortpflanzungssystems einer Frau. Es befindet sich im kleinen Becken zwischen der Blase und dem Rektum. Die Gebarmutterhohle hat auf dem Schnitt die Form eines Dreiecks, in dessen oberen Ecken sich die Mundung der Eileiter offnet, in der unteren Offnung des Gebarmutterhalskanals.

Normalerweise beginnt die Bildung der Gebarmutter aus den fusionierten sogenannten Muller-Kanalen, also aus zwei identischen Halften - rechts und links - in der 10-14-Woche der intrauterinen Entwicklung des Madchens. Ihre Fusion fuhrt zur Bildung von zwei uterus-vaginalen Hohlraumen, die durch das mittlere Septum getrennt sind, das spater verschwindet und der Uterus gleichgeschlechtlich wird.

Die bizarre Gebarmutter (Uterus bicornis) ist eine Folge der nicht Verschmelzung jener Teile der Muller-Kanale. Eine Verletzung der Verschmelzung der Müller-Kanale fuhrt zur Bildung eines Gebarmutterhalses und zweier Gebarmutterhohlen. Der zweihornige Uterus ist auf verschiedenen Ebenen in zwei Teile geteilt, die in den unteren Teilen immer verschmelzen.

Unter allen angeborenen Pathologien der Gebarmutter ist Bichrogenitat die haufigste. Aber im Allgemeinen wird es nur bei 0,1-0,5% der Frauen diagnostiziert.

Bei einer zweihornigen Gebarmutter, die einen Hals hat, tritt die Schwangerschaft haufiger in einem der Horner auf, seltener gleichzeitig in zwei Hornern. Schwangerschaft und Geburt konnen ohne Komplikationen verlaufen. Es ist jedoch nicht ungewohnlich, dass eine Schwangerschaft bei Frauen mit einer bizarren Gebarmutter mit der Gefahr einer Unterbrechung auftritt. Es besteht ein erhohtes Risiko fur Fruhgeburten und unsachgemaße Prasentation (Gesaß) des Fotus. Es kann eine Pathologie der Lage der Plazenta (Plazenta-Prasentation) geben, die mit ihrer Ablosung droht. Manchmal wird eine naturliche Geburt unmoglich, in diesem Fall wird auf einen Kaiserschnitt zuruckgegriffen.

Bei einer bizarren Gebarmutter sollte eine Frau, beginnend mit den fruhesten Schwangerschaften, unbedingt unter der Aufsicht eines Arztes stehen und alle seine Empfehlungen strikt befolgen, sowie unbedingt in einem medizinischen Krankenhaus gebaren, wo es die Moglichkeit der rechtzeitigen Notfallversorgung gibt.

SUIZIDPRÄVENTION IN RUSSLAND

Chuler-ool Sch. - die Studentin des 2. Studienjahres
Wissenschaftliche Leiter: K.b.W. Zaritskaja V.V.; Tkaschjova N.A.

Nach dem erklärenden Wörterbuch der psychiatrischen Begriffe ist Selbstmord ein absichtlicher Akt der Unterbrechung des eigenen Lebens, ein äußerst wichtiges Problem der Weltskala. Die Ursachen des Suizids können materielle, zwischenmenschliche Probleme, Hetze im Internet, Alkohol- und Drogenabhängigkeit, psychische Erkrankungen wie Depression, Schizophrenie sein.

Ziel der Studie ist es, Wege zur Suizidprävention aufzuzeigen.

Laut Statistik sinkt die Sterberate durch Suizid seit 2000 rasant. Trotzdem führt Russland die Zahl der Selbstmorde weltweit an.

Zur Zeit, um Selbstmord zu verhindern, haben die Plattformen der populärsten sozialen Netzwerke begonnen, das Problem von Selbstmorden weit zu beleuchten. Also, im September dieses Jahres wurde «Monat des Bewusstseins über die Verhinderung von Selbstmorden» ausgeführt. Im September kommen Aktivisten, Präventionsorganisationen, Überlebende von Suizidversuchen zusammen, um das Bewusstsein zu schärfen und die Menschen zur Unterstützung zu bringen. Diese Aktivität lässt die Gesellschaft davon überzeugen, dass Suizidversuche und suizidales Verhalten unterdrückt werden können.

Ein wichtiger Bestandteil in der Suizidprävention ist der globale anonyme Telefondienst, der 1953 vom englischen Priester Chad Vara gegründet wurde. Mit ihrer Hilfe werden Konsultationen mit Psychologen und Pädagogen durchgeführt, die jedem, der sie anspricht, emotionale und moralische Unterstützung bieten.

Der Hauptschritt zur Suizidprävention ist die rechtzeitige Identifizierung von Anzeichen von suizidalem Verhalten bei einer Person. Solche Menschen sprechen oft über die Themen Selbstmord, Tod, sie träumen von Tod oder eigenen Tod; sie zeigen ein erhöhtes Interesse an den Werkzeugen der Entbehrung des Lebens, argumentieren über den Verlust des Lebens, Briefe oder Gespräche Abschied Charakter. Der Rückgang der menschlichen Ressourcen der Persönlichkeit, um Schwierigkeiten zu begegnen: Depression, Stress, Hilflosigkeit, Krankheit, Gewalt in der Nähe, Erschöpfung des physischen oder psychischen Plans, die Notwendigkeit und Unfähigkeit, Schwierigkeiten zu überwinden und die Tendenz zu kompromisslosen Entscheidungen und Handlungen gehören auch zu den Anzeichen von Selbstmordverhalten. Wenn überhaupt, ist es ratsam, Kurse der psychotherapeutischen Behandlung durchzuführen, deren Eingang die Schwere des Problems bewertet und auf der Grundlage dieser Einschätzungen psychische Verletzungen ausgearbeitet werden, Gespräche und andere von Experten vorgesehene Verfahren durchgeführt werden.

Während der Studie haben wir herausgefunden, dass besondere Aufmerksamkeit auf diejenigen gerichtet werden sollte, die in der Vergangenheit Selbstmordversuche erlebt haben. Um wiederholte Versuche zu verhindern, muss eine Person von einem Psychologen beobachtet werden und die antisuizidale Barriere der Persönlichkeit stärken.

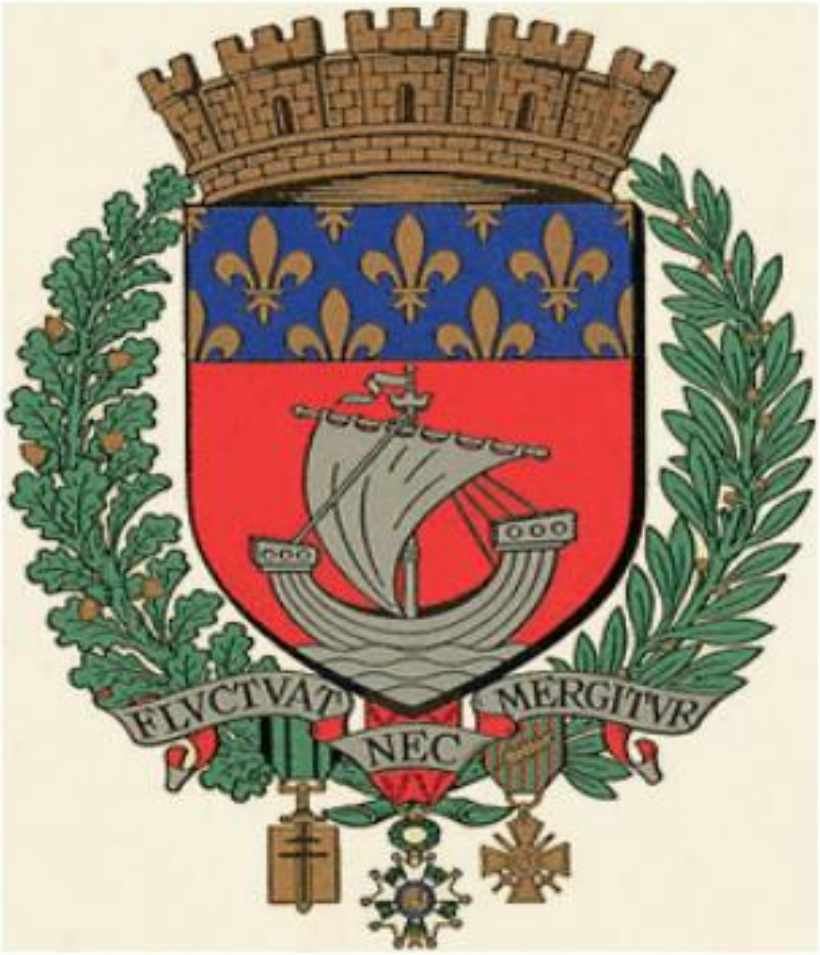
Daher spielen nicht nur die oben genannten Methoden eine große Rolle bei der Suizidprävention, sondern auch Informationsressourcen, mit denen Informationen verbreitet werden, die die Bedeutung dieses Problems vermitteln.

DIE KLINIKO-ANATOMISCHEN BESONDERHEITEN DER VENOSEN SINUSEN BEI DEN NEUGEBORENEN

Schagan S. – der Student des 2 Studienjahres
Wissenschaftliche Leiter: A. E. Pawlowa, N. A. Tkatschjowa

Bei den Neugeborenen sind venosen Sinuse gut entwickelt. Die grosse praktische Bedeutung hat den oberen sagittalen Sinus, besonders auf dem Gebiet den grossen Abteilung, die fur die Punktion zuganglichst ist. Das Deckgewebe des Schädels ist fein: es gibt hier 1-2 venose Zustrome, und der Lichtstreifen des Sinusen ist von den Scheidewanden frei.

Bei der Ausdehnung wird die Breite des Lichtstreifens posterior allmahlich zum Hinten ausgedehnt. Deshalb ist bei der Punktion ruckwarts zu richten. Der untere sagittale Sinus ist schwach entwickelt, manchimal sind Querlaufender und sigmoideuer Sinuse gut entwickelt. Die kawernose Sinuse sind von den zahlreichen klenen Hohlen mit der grossen Menge locker vorgestellt. Der gerade Sinus hat gleich am Anfang ampullaide Erweiterung und schliesst er sich an recht querlaufende seltener an Abfluss der Sinus an.



SECTION du FRANCAIS et du LATIN

СЕКЦИЯ ФРАНЦУЗСКОГО И ЛАТИНСКОГО ЯЗЫКОВ

Руководитель секции: старший преподаватель Шпильчук Л.И.
Председатель: Исущенко Е.
Секретарь: Глаголева М.

ПРОИСХОЖДЕНИЕ НАЗВАНИЙ ХИМИЧЕСКИХ ЭЛЕМЕНТОВ

Кондрашин Н. -1 к.
Научный руководитель: Субачева Н.А..

В средние века все химические элементы получали свои названия на латинском языке; эта традиция не нарушается и в наше время. В начале XIX столетия для химических элементов были предложены сокращенные буквенные обозначения, которыми служили или одна начальная буква латинских названий элементов, или, значительно чаще, две буквы, начальная и одна из последующих. Так образовались современные знаки (символы) химических элементов, получившие впоследствии международное признание. Русские названия химических элементов в большинстве представляют собой их латинские названия с измененными окончаниями в соответствии с особенностями нашего языка. Но вместе с тем можно назвать много элементов, которые имеют на русском языке особые названия, отличные от латинских. Этими названиями служат или коренные русские слова, например, железо (Fe), медь (Cu), ртуть (Hg), или перевод латинского названия элемента на русский язык, например, водород (H), кислород (O).

Я И МОЕ ИМЯ

Новиков Т. – 1 к.
Научный руководитель: Шпильчук Л.И

В конце X века из Византии на Русь вместе с новой верой пришли церковные книги и, в частности, святцы. Они содержали христианские имена, среди которых были имена греческого и латинского происхождения. Многие русские имена греко-латинского происхождения восходят к эпитетам и добавочным именам античных богов. Некоторые русские имена греко-латинского происхождения восходят к личным именам античных богов. Многие русские имена латинского происхождения восходят к римским родовым именам и прозвищам, которые некогда были даны кому-либо из представителей рода и стали названиями ветвей рода. Некоторые имена греко-латинского происхождения восходят к личным именам героев античной мифологии. Среди русских имён греко-латинского происхождения также можно выделить небольшую группу имён, которые восходят к названиям географических объектов. В наше время, люди в большинстве своем, перестают придавать имени какое либо значение, поэтому называют так, как им нравится, например по звучанию. Меня зовут Тимофей, Тимка, Тимоха, Тимати. Это имя пришло в Россию из греческого языка и означает «Любящий бога».

ЛАТИНСКИЙ ЯЗЫК – ЯЗЫК МЕДИЦИНЫ

Абашкина А. – 1к.
Научный руководитель: Шпильчук Л. И.

Латынь в медицине традиционно используется в анатомической, клинической и фармацевтической терминологии. Знание латыни позволяет врачам разных стран мира без труда понимать друг друга.

Давняя традиция использования латинского языка в медицине служит объединяющим фактором для медиков всего мира и унификации медицинского образования.

Еще совсем недавно большинство медицинских сочинений писалось по латыни. На латыни писал великий русский хирург Н.И.Пирогов, а И.П.Павлов написал выразительное послание к молодежи «Ad juventutem epistola».

Особую роль латинский язык играет в анатомии и фармакологии. Все органы и части человеческого тела имеют либо латинские, либо латинизированные названия. То же самое относится и к фармакологии: в этой области унификация особенно важна, так как без нее невозможно ориентироваться в безбрежном море лекарственных препаратов.

Рецепты издавна выписываются на латинском языке и по определенным правилам, так что рецепт, выписанный, например, в Америке, должны без труда понять в России.

Многие выражения родились в сфере медицины. К ним относится, например, знаменитое выражение, приписываемое греческому врачу Гиппократу: Ars longa, vita brevis est («Жизнь коротка, искусство вечно»), Noli nocere («Не навреди»), Medicus curat (morbos), natura sanat («Врач лечит (болезни), природа исцеляет»). Функциональная роль крылатых выражений состоит в усилении выразительности высказывания, они выступают как определенного рода стилистическое средство.

Из всего сказанного понятно, что изучение латинского языка, поддержание высокого уровня знаний в этой области является весьма насущной задачей современного образования.

РИМСКИЙ ТЕАТР

Гогулова С.-1 к.
Научный руководитель: Шпильчук Л. И.

Римский театр не имел большого влияния на сознание общественности, а был всего лишь развлечением и способом приятного веселого времяпрепровождения.

Во всех жанрах, помимо ателланы, актеры играли без масок, Древнеримская театральная маска отличалась от греческой тем, что она имела большие отверстия для рта и глаз, что способствовало более выразительной мимике.

В римских источниках говорится, что Росций впервые ввел маску, чтобы скрыть свое косоглазие.

Актеры для комедий Плавта должны были быть искусными танцорами, акробатами и декламаторами.

Исполнение арии сопровождалось мимической игрой и телодвижениями.

Положение актеров в Риме было тяжелым – они были бесправны и подвергались даже телесным наказаниям.

Первый каменный театр был построен Помпеем.

Составными частями древнегреческого театра были: орхестра – полукруглая площадка, на которой выступал хор и места для зрителей, расположенные амфитеатром.

В италийских театрах сценические площадки, напоминали сцену нашего современного театра, на возвышение вела небольшая лесенка.

Особенностью театра составляла декоративная стена, украшенная мраморными колоннами, статуями, лепкой.

Одним из источников театральных представлений в Риме были народные песни.

В ателлане были четыре маски, которые на протяжении длительного времени веселили честной народ.

Древнейший вид драматического действия – мим первоначально была грубоватой импровизацией, исполнявшаяся на итальянских праздниках, а впоследствии мим стал литературным жанром.

Бесплатное посещение театра было, одинаково свободное для мужчин и женщин, но не для рабов.

ОБЩЕКУЛЬТУРНОЕ ЗНАЧЕНИЕ ЛАТИНСКОГО ЯЗЫКА

Дегтярева О.-1к.
Научный руководитель: Субачева Н.А.

Латинский язык продолжает оставаться важным культурным явлением современного мира. Сфера применения латинского языка весьма широка и отличается значительным разнообразием .Во многих областях науки, прежде всего, в ботанике и зоологии, терминология основана на латинских или латинизированных греческих словах. В медицине латынь традиционно используется как международная терминология. Несмотря на то, что сейчас латинский язык считается мертвым языком, в наше время продолжает оставаться международным языком самых различных отраслей науки.

Многие слова в русском языке являются заимствованиями из древнегреческого и латинского языков. В своем докладе мы обращаем внимание на это явление и знакомим с повседневными словами латинского происхождения: студент, аудитория, академия, доцент и т.д.

ПЕРВЫЕ КОММУНИКАЦИОННЫЕ СООРУЖЕНИЯ В ДРЕВНЕЙ ГРЕЦИИ И РИМЕ

Жмурко В.-1к.
Научный руководитель: Субачева Н.А.

Наиболее грандиозные коммуникационные сооружения были созданы в Древней Греции и Риме. Остатки этих сооружений, дошедшие до нашего времени, а также описания их, имеющиеся в произведениях некоторых древних писателей дают возможность судить о них с большой точностью. По своим масштабам и по качеству работы они нисколько не уступали современным сооружениям (по конструктивному оформлению в течение многих столетий не имели себе равных ни в эпоху феодализма, ни даже в начальный период развития капитализма). Во времена древних греков был совершен значительный скачок в развитии систем водоснабжения.

ИЗ ИСТОРИИ ОЛИМПИЙСКИХ ИГР

Щерба С.-1к.
Научный руководитель: Субачева Н.А.

«…Нет ничего благороднее солнца, дающего стокго сета и тепла. Так и люди прославляют те состязания, величественнее которых нет ничего,- Олимпийские игры…» Пиндар.

Актуальность темы состоит в том, что Олимпийские игры с каждым годом приобретают большую популярность. Они охватывают практически все категории населения Земного шара т.к., например, существуют Параолимпийские игры, Студенческие Олимпийские игры и т, д. Поэтому эта тема актуальна для изучения. Олимпийские игры имеют богатую историю со времен Древней Греции и по наши дни. С древности Олимпийские игры были главным спортивным событием всех времен и народов. Несмотря на свою долгую историю, Олимпийские игры сохранили свои традиции: Олимпийский огонь, периодичность проведения, некоторые виды спорта.

МЕДИЦИНСКАЯ СИМВОЛИКА

Гречишникова Е.-1к.
Научный руководитель: Шпильчук Л.И.

Символы и эмблемы – это условное изображение, которые символизируют медицинскую сферу, принадлежность к медицинской профессии, различные отрасли в области медицины, какие-то отдельные медицинские специальности. Среди них можно выделить: изображение змеи (с чашей, с посохом Асклепия, треножником Аполлона, свечой, зеркалом), сердце на ладони. С древних времен змея символизирует добро, мудрость, всеведение, знание, бессмертие. На эмблемах, имеющих отношение к медицине, змея чаще изображается в сочетании с чашей. Несмотря на все многообразие символов медицины и их многочисленные различия, каждый человек знает, что там , где они изображены, он встретит доброту, милосердие и получит необходимую помощь.

КАНОНЫ КРАСОТЫ В ДРЕВНЕЙ ГРЕЦИИ И РИМЕ. ПЕРВЫЕ КОСМЕТИЧЕСКИЕ СРЕДСТВА

Михайлова В.-1к.
Научный руководитель: Субачева Н.А.

Во времена Древней Греции и Рима косметическим средствам предавалось совершенно различное значение: они использовались в религиозных, декоративных целях, наносили их как мужчины, так и женщины. В ходе изучения материала по данной теме было обнаружено, что история косметики так же длинна, как история человечества. Целью рабы является изучение истории становления косметики в древнегреческом и древнеримском обществе, оценить пользу и вред. В современных лечебных и профилактических косметических средствах используются проверенные временем и человеком рецепты Древней Греции и Древнего Рима.

ГИППОКРАТ КОССКИЙ

Данилова А.- 1к.
Научный руководитель: Шпильчук Л.И.

Древнегреческого врача Гиппократа называют» отцом медицины», реформатором античной медицины. Гиппократ и его последователи явились основоположниками клинической медицины: разработка принципов и правил диагностики и лечения была основана на изучении «природы тела». Гиппократ-один из основоположников научного подхода к болезням человека и их лечению. С именем Гиппократа связывают учение о четырех темпераментах: сангвинический, холерический, флегматический и меланхолический. Гиппократ занимался практической медициной. По его мнению хороший врач должен определить состояние пациента уже по одному его внешнему виду и провозглашал повсеместно принцип «Primum noli nocere». Клятва Гиппократа является выдающимся памятником гуманизма и исходным пунктом развития профессиональной врачебной этики.

МЕДИЦИНСКАЯ ТЕРМИНОЛОГИЯ – СИСТЕМА СИСТЕМ

Красненкова К.-1 к.
Научный руководитель: Субачева Н.А.

Современная медицинская терминология достигает нескольких сот тысяч терминов. Это – система систем, которая включает: морфологические образования и процессы; болезни и патологические состояния человека; формы их течения и симптомы, синдромы; возбудители и переносчики болезней и т.п.

Каждая субтерминосистема обслуживает отдельную медицинскую , биологическую и фармацевтическую науку или область знания.. Термины из разных субсистем взаимодействуют друг с другом, находятся в определенных смысловых отношениях и связях на уровне макротерминосистемы. Объектами изучения в курсе латинского языка и основ медицинской терминологии являются следующие подсистемы: анатомо-гистологическая номенклатура; клиническая терминосистема и фармацевтическая терминология.

РИМСКИЙ КАЛЕНДАРЬ

Сонин Д.-1к.
Научный руководитель: Шпильчук Л.И.

Когда зародился римский календарь неизвестно. В VIII столетии до н.э.у римлян был календарь, содержащий в году 10 пронумерованных месяцев без названий. Год начинался с весны. Во время Ромула, основателя Рима, некоторые месяцы получили свое название. Первый месяц был назван Мартиусом, в честь бога войны Марса. Следующий месяц Априлис назван так, потому что в апреле раскрываются на деревьях почки. Третий месяц, Май, был посвящен богине Майе, четвертый-богине Юноле. Последние шесть месяцев продолжали называться порядковыми номерами. Четыре месяца имели по 31 дню и шесть месяцев – по 30. Продолжительность года составляла 304 дня. В VII веке до н.э. император Нума Помпили произвел реформу календаря, прибавил два дополнительных месяца, которые были названы январем и февралем. Новый римский календарь был весьма хаотичным, четыре его месяца содержали по 31 дню, семь месяцев-по 29 дней и один месяц, февраль, имел 28 дней. Всего в году было 355 дней. В 46 году до н.э. появилась необходимость в реформе календаря, что и сделал Юлий Цезарь, по совету египетского астронома Созигена. Устанавливался четырехгодичный солнечный цикл. Начало года Цезарь перенес на 1 января, т.к. с этого дня консулы вступали в должность, начинался римский хозяйственный год. Обозначение римлянами чисел месяца основывалось на выделении в нем трех главных дней, связанных первоначально со сменой фаз луны.

СПОРТ В ДРЕВНЕМ РИМЕ И ГРЕЦИИ

Буданова А.-1к.
Научный руководитель: Субачева Н.А.

С древних времен олимпийские игры были главным спортивным событиемвсех времен и народов. В дни проведения олимпиады воцарялось согласие и примирение. Войны прекращались и все сильные, и достойные люди соревновались в честной борьбе за звание лучшего.

За много веков олимпийское движение преодолело много препятствий, забвение и отчуждение. Но несмотря ни на что олимпийские игры живы и по сей день. Конечно это уже не те соревнования, в которых принимали участие обнаженные юноши и победитель которых, въезжал в город через пролом в стене. В наши дни олимпиады одно из крупнейших событий в мире. Игры оснащены по последнему слову техники- за результатами следят компьютеры и телекамеры, время определяется с точностью до тысячных долей секунды, спортсмены и их результаты во многом зависят от технического оснащения.

Благодаря СМИ не осталось ни одного человека в цивилизованном мире, который не знал бы, что такое олимпиада или не видел бы соревнования по телевизору.Но мы хотим подробнее рассказать о Древних Олимпийских играх и их истории и показать, как это было важно для

людей, живущих в Древней Греции, не только с точки зрения спортивного зрелища, но с социальной позиции.

ДРЕВНЕГРЕЧЕСКАЯ И РИМСКАЯ МИФОЛОГИЯ В НЕКОТОРЫХ НАЗВАНИЯХ ЛЕКАРСТВЕННЫХ РАСТЕНИЙ

Баранова Т..- 1 к.
Научный руководитель: Шпильчук Л. И.

Этимология — это раздел лингвистики, который занимается изучением происхождения слов. Здесь мы рассмотрим происхождение русских и латинских названий лекарственных растений. Также более подробно осветим необходимость знания латинских названий растений, в которых отражено токсическое действие веществ, содержащихся в том или ином растении.

Существуют латинские названия растений, которые отражают их свойства. В формации при изготовлении лекарственных средств широко применяются лекарственное растительное сырье.

Растение применялось многими народами в качестве смазки стрел при охоте на животных.

Целью доклада является выяснение происхождения некоторых названий лекарственных растений. Доклад содержит информацию об историях, сказаниях, о происхождениях некоторых лекарственных растений, которые студенты употребляют в фармацевтической терминологии.

АВИЦЕННА – ВЕЛИКИЙ ВРАЧ ВОСТОКА

Исущенко Е., Глаголева М. – 1к.
Научный руководитель: Шпильчук Л И

Цель нашего доклада: вклад Авиценны в развитие медицины. Доклад содержит биографию великого ученого, информацию о его трудах в области медицины, так как его справедливо считают одним из величайших ученых медиков в истории человечества. Следует отметить, что общее число медицинских трудов Ибн Сины доходит до 50 трудов общего характера, в которых освещаются те или иные разделы медицины и некоторые ее теоретические вопросы:
-труды о заболеваниях какого- либо одного органа или об одной конкретной болезни;
-труды по лекарствоведению.

Особое внимание в докладе уделено его обширному труду, состоящему из 5 книг “ Канон Врачебной науки”.

К ВОПРОСУ ОБ ИСТОРИИ АМУРСКОЙ ГОСУДАРСТВЕННОЙ АКАДЕМИИ

Бобрышев С. – 1 к.
Научный руководитель: Ткачева Н.А.

Актуально ли знать историю вуза, в котором ты обучаешься? Безусловно, да, потому что, узнав о преподавателях, которые внесли свой вклад в развитие медицины, можно будет с гордостью говорить про свою alma mater.

При изучении материала по представленной теме я познакомился не только с историей вуза, в котором учусь, но и с работами многих легендарных преподавателей, узнал об их вкладе в развитие Академии. Так первым ректор БГМИ был Борис Николаевич Анфимов, доцент, кандидат медицинских наук, анатом, который ранее заведовал кафедрой нормальной анатомии в Горьковском медицинском институте.

Преподаватели, внесшие вклад в развитие нашего вуза: Кира Александровна Мещерская, Самуил Максимилианович Дионесов, Александр Евгеньевич Бородин, Сергей Григорьевич Птицын, Магомет Кертибиевич Надгериев.

Совместно с изучением истории и информации о преподавателях, я узнал про подразделения университета: кардиоцентр и центр «Семейный Врач», в которых прием ведут профессионалы своего дела. В данных центрах проводятся сложные операции по спасению жизни людей.

В итоге можно отметить, что за все время своего существования академия выпустила большое количество квалифицированных сотрудников в области медицины, которые занимаются спасением человеческих жизней.

ОБРАЗОВАНИЕ В ДРЕВНЕМ РИМЕ

Морозова О. – 1к.
Научный руководитель: Ткачева Н.А.

Образование в Древнем Риме было крайне важным, поэтому древние римляне уделяли большое внимание воспитанию и образованию детей. По мнению Плутарха, в Риме совместное, коллективное обучение началось в середине III в. До н. э., когда там открыл свою школу Спурий Карвилий. Система образования была заимствована римлянами из Древней Греции, но оно отличалось тем, что в нем больше внимания уделялось гуманитарным дисциплинам и формированию всесторонне развитой личности. Для образования древнего Рима главным было подготовить социально активных людей. В большей степени образовательному влиянию подвергались мальчики.

Образование в Древнем Риме было представлено тремя этапа: тривиальные школы (возраст 7-12 лет, низшая образовательная ступень; грамматические школы (12-16 лет). Обучение было в этих школах платным. В школе дети изучали так называемые «свободные искусства»: риторика, диалектика, грамматика, арифметика, геометрия, астрономия, музыка, медицина, архитектура, - эти дисциплины признавались знатными сословиями. Риторические школы (16-20 лет). Эти учреждения посещали те молодые люди, которые ставили перед собой цель в будущем стать общественными или политическими деятелями.

Следует отдать должное римским педагогам, так как именно они в целях оптимизации учебного процесса сделали первый шаг к созданию первых учебных пособий и руководств для учителей.

В обучении девочек наблюдались по сравнению с мальчиками некоторые отличия. Девочки из состоятельных семей получали образование дома, а те, кто победней ходили в школу вместе с мальчиками. Но совместное обучение для девочек ограничивалось лишь начальной школой; после введения ступени грамматической школы путь туда был открыт только для мальчиков, девочки богатых продолжали своё обучение дома, а бедные обучение заканчивали.

В естественных науках отмечается значительная степень заимствования эллинских знаний. Цельс обобщил достижения греческой медицины. Гален продолжил практику анатомических вскрытий. Основателем собственно римской науки нередко называют Варрона, составившего энциклопедию наук.

В гуманитарных науках римляне также отталкивались от греческих идей.

Родоначальником римской исторической науки считается Энний (II век до нашей эры). Из представителей греческой интеллигенции, писавших на латинском языке, наибольшей известностью пользовались Дионисий Галикарнасский, написавший книгу «Римская археология» и утверждавший о родстве римлян и греков, и Плутарх, автор знаменитых

«Сравнительных жизнеописаний». Вершиной римской исторической мысли стали «История» и «Анналы» Тацита.

ИСТОРИЯ ВРАЧЕВАНИЯ ЗУБОВ

Матафонова А. – 1 к.
Научный руководитель: Н.А. Ткачева

В истории стоматологии можно выделить три крупных периода. Первый период охватывает огромное временное пространство – от глубокой древности до XVII в. Включительно; он может быть назван историей зубоврачевания. Второй период, становление одонтологии, относится к XVIII-началу XX в. Третий период, формирование стоматологии, берет начало с 1920-х гг.

Подробно хочется остановиться на первом периоде, проследив развитие зубоврачевания с глубокой древности до XVIII в. Стоит отметить, что зубоврачевание в этом временном промежутке тесно связано с лечением переломов, вывихов и других травм, а также заболеваний челюстей. Окончательная специализация врачей стоматологов произойдет после.

Способы лечения были максимально разнообразными. Уже в Древнем Египте врачи проводили протезирование зубов, но чаще поврежденные и шатающиеся зубы просто связывали с здоровыми соседями. Широко использовались масла, пасты и травы для избавления от боли, прижиганием раскаленным железным зондом. Знания о способах лечения, классификация зубных болезней и другие знания из области зубоврачевания фиксировались на глиняных таблицах, в трактатах и служили опорой будущим врачам.

Гигиене полости рта сначала не уделяли особого внимания. Применялись различные средства: деревянные палочки, пемзы, коралловый порошок и щетки (похожие на современные и выполненные из натурального меха). Применялось полоскание из отвара целебных трав.

Зубоврачевание и медицина в целом постепенно развивались, но период Средневековья в Европе сильно затормозил развитие естествознания. Средневековые врачи обращались к магии и «травникам», а зубоврачеванием могли заниматься брадобреи и цирюльники.

Подводя итоги, хочется отметить, что зубоврачевание первого периода далеко от идеала. Некоторые методы оказывались неэффективными, а некоторые и вовсе смертельными. Однако, именно благодаря эмпирическим знаниям, полученным в ходе применения разных методов врачевания, благодаря передаче и распространению этих знаний среди различных народов сформировался такой раздел медицины, как стоматология.

РУССКИЕ ВРАЧИ-ПЕРЕВОДЧИКИ ЛАТИНСКОЙ ТЕРМИНОЛОГИИ

Лукьянова В. – 1 к.
Научный руководитель: Н.А.Ткачева

Хорошего врача можно легко распознать по тому, как он владеет терминологией, по тому насколько грамотно использует термины в своей речи и понимает их. И если вы, приложив немалое количество усилий, попробуете запомнить все эти сложные слова, а потом загляните в словарь, то увидите, что абсолютное большинство этих терминов произошли от латинского или греческого языков. Формируя медицинскую терминологию, латинские и латинизированные греческие элементы взаимодействуют друг с другом, приобретают новые значения, вступают в новые сочетания, организуют новые модели и, наконец, образуют новые ряды, гнезда и другие комплексные объединения – все то, из чего складывается терминологическая система.

Конечно же, медицинская терминологическая система, такая какую мы изучаем и какой пользуемся сейчас, появилась не сразу. Развитие отечественной латинской(медицинской) терминологии прошло долгий и нелегкий путь в несколько этапов: от принятия заимствований, их уточнения до комплексной систематизации семидесяти тысяч основных медицинских терминов. В России научная литература первоначально представляла собой переводы, сделанные с латинского и греческого. Древние языки изучались в Московской славяно-греко-латинской академии, где учился М.В. Ломоносов. Ряд сочинений великого русского ученого написаны на латинском языке. М.В. Ломоносов стоит у истоков русской научной терминологии, в которую он вводил, наряду с русскими словами, интернациональные греко-латинские названия. На латинском языке писали ученый Н.М. Максимович-Амбодик (1744-1812 гг.), великий русский хирург Н.И. Пирогов (1810-1881 гг.). Основы же русской научной медицинской терминологии были заложены анатомом, хирургом, переводчиком и художником М. И. Шейным (1712–1762). Главным фактором, который мотивировал русских врачей кропотливо работать с архивами и разбираться в большом количестве источников, является возможность преподавания медицинских дисциплин на русском языке, что было бы невозможно без разработки отечественной терминологии. А это, в свою очередь, ставило под угрозу благоприятного развития медицины, системы медицинского образования и здравоохранения в России.

ПЕРВООТКРЫВАТЕЛИ, В ЧЕСТЬ КОТОРЫХ НАЗВАНЫ МНОГИЕ АНАТОМИЧЕСКИЕ ТЕРМИНЫ

Красавина А. О. - к.
Научный руководитель: Ткачёва Н.А.

Nomina qui ignarus i gnarus etiam rerum esta.

Аристотель

Развитие любой отрасли научного знания сопровождается появлением терминов. Путь изучения строения тела человека дошёл до нас в первую очередь через авторскую анатомическую терминологию.

Авторские названия в основной своей массе начали появляться в XV-XVI вв., когда стали складываться учёными объединения. По мере общения, написания анатомических трактатов коллеги и их ученики, изучая или обобщая открытия, к названиям стали прибавлять фамилию или имя естествоиспытателя, впервые открывшего то или иное образование. Таким образом, авторские термины были наиболее поэтичны и часто необычны.

В 1964 г. В СССР был издан Толковый анатомический словарь Доната Тибора на русском языке, снабженный различными приложениями. В нём представлены 3 анатомические номенклатуры, из них BNA имеет наибольшую ценность для раскрытия темы, т. К. это первый международный документ, сохранивший наибольшее число эпонимов (682 термина, в состав которых входят фамилии первооткрывателей). Исследователи многих стран оставили свои имена в истории анатомии.

Евстахий Бартоломео (1510 – 1574) – итальянский врач, один из отцов человеческой анатомии. Вплотную занимался изучением слухового аппарата человека. Его именем названа слуховая труба (tuba auditiva Eustachii). Катар Евстахиевой трубы долгое время в медицине называли евстахит. Бартоломео были описаны трубные миндалины – Евстахиевы миндалины (tonsilla tubariae); мышца, натягивающая барабанную перепонку – Евстахиева мышца (m. Tensor timpani); заслонка нижней полой вены – Евстахиева заслонка (valvula venae cavae inferioris).

Сильвий Франсуа (1614 – 1672) – немецкий врач и анатом французского происхождения De le Boe. Специализировался на изучении головного мозга и сосудов. Его именем названы: Сильвиева щель-боковая щель мозга (fissura Silvii); Сильвиев водопровод (aquaeductus cerebri, aquaeductus mesencephali); Сильвиева артерия (a. Cerebri media); Сильвиева вена (v. Cerebri media); Сильвиева долинка – латеральная ямка большого мозга (ossa lateralis cerebri); Сильвиево квадратное мясо – квадратная мышца подошвы (m. Quadratus plantae).

Виллизий Томас (Willis Thomas, 1622 – 1675) – один из самых выдающихся английских врачей XVI в. Его взгляды на сущность проблемы были передовыми и создали ему немало врагов. В истории анатомии известны: Виллизиев круг (circus arteriosus); Виллизиевы артерии (arteria communicans anterior et posterior); Виллизиев нерв – добавочный нерв (n. Accessorius); Виллизиева нервная ветвь (n. Ophtalmicus), идущая со стороны тройничного нерва; Виллизиев нервный центр (ganglion solare); Виллизиево преддверие привратника желудка (antrum pyloricum).

Эти и многие другие выдающиеся, разносторонне образованные исследователи, не только анатомы, но прежде всего философы остались в истории медицины неразрывно связанными со своими ошеломительными открытиями. И хотя с развитием науки к терминологии было выдвинуто требование простоты и краткости, имена первооткрывателей устройства человеческого тела забывать непозволительно!

ВРАЧИ – ПРЕПОДАВАТЕЛИ АГМА

Бухунишвили К.- 1 к.
Научный руководитель: Ткачёва Н.А.

За истекшие 70 лет в АГМА на ниве просвещения трудилось немало преподавателей.

Это неординарные, яркие люди. Низкий поклон и великая благодарность им за человечность, доброту, научный вклад в развитие отечественной медицины! В своем докладе я поместила краткий очерк о врачах-преподавателях, которые заслуживают нашего внимания и почтения.

Михаил Тимофеевич Луценко

Заслуженный деятель науки Российской Федерации. В Благовещенском государственном медицинском институте Михаил Тимофеевич трудился ассистентом, доцентом, профессором, заведующим кафедрой гистологии, проректором по научной работе, с 1975 по 1986 гг. – ректором.

Со дня открытия (1981 г.) Дальневосточного научного центра физиологии и патологии дыхания М.Т. Луценко в течение 24 лет работал его директором, с 2005 г. Руководил научной лабораторией. В настоящее время данный центр – это крупнейшее на Дальнем Востоке динамично развивающееся научно-медицинское учреждение. Центр располагает высококвалифицированными кадрами, среди которых доктора и кандидаты медицинских наук. Безусловно, что базой для развития и научного становления центра послужили изыскания академика Луценко.

Владимир Анатольевич Доровских

Владимир Анатольевич прошел путь от ассистента кафедры фармакологии до ректора академии. Возглавив вуз, он сумел не только сохранить, но и приумножить высокий потенциал учебного заведения. Под руководством В.А. Доровских вуз получил международное признание и ряд зарубежных наград в области международного сотрудничества, развития кадрового и интеллектуального потенциалов. Работая в БГМИ/АГМА, он создал собственную научную школу по исследованию новых лекарственных средств, внедрил в клиническую

практику препараты, облегчающие адаптацию к холоду. В.А. Доровских автор более 800 научных трудов, двух десятков монографий и учебных пособий.

Юрий Сергеевич Ландышев

В 1961 году Юрий Ландышев был приглашен на работу в Благовещенский государственный медицинский институт, где в последствии возглавил кафедру госпитальной терапии.

Юрий Сергеевич – талантливый учёный, вложивший много труда и идей в развитие отечественной медицинской науки. Основным и постоянным направлением научных исследований Ю.С. Ландышева являлось изучение патологии бронхолегочной системы, механизмов ее адаптации к производственным, климатогеографическим и социально-бытовым условиям Амурского региона. Юрий Ландышев является основателем терапевтической и пульмонологической школ Амурской области. Ученики Юрия Сергеевича работают в медицинских вузах России, Украины, Казахстана, Германии, Израиля и США. В 1991 году Юрию Ландышеву было присвоено звание «Заслуженный деятель науки РФ».

Кулик Ярослав Петрович – пионер кардиохирургической службы в Приамурье. Впервые в Амурской области он начал проводить плановые операции на сердце.

В 1967 году он покинул родной Смоленск и уехал на Дальний Восток. Ярослав Петрович заведовал кафедрой общей хирургии, затем – кафедрой госпитальной хирургии БГМИ. В 1972 году защитил докторскую диссертацию. По его инициативе на базе кафедры был открыт областной кардиологический центр, а в 1974 году – проблемная лаборатория искусственного кровообращения. В настоящее время это кардиохирургический центр АГМА. Здесь же, в Благовещенске, Я.П. Кулик начал выполнять первые лапароскопические операции. Реализацию его творческих планов продолжают в Приамурье его ученики.

Заболотских Татьяна Владимировна

Доктор медицинских наук, профессор, заведующий кафедрой детских болезней факультета последипломного образования. Отличник здравоохранения, заслуженный врач РФ. Т.В. Заболотских опубликовано более 200 научных и научно-методических работ в отечественных и зарубежных изданиях, две монографии. В 2007 году ей присвоено почетное звание «Заслуженный врач Российской Федерации».

В феврале 2011 года Татьяна Владимировна избрана ректором Амурской государственной медицинской академии и возглавляет академию по сегодняшний день.

УЧЁНЫЕ И ВРАЧИ, ЛАУРЕАТЫ НОБЕЛЕВСКОЙ ПРЕМИИ В ОБЛАСТИ МЕДИЦИНЫ

Козьякова Т. – 1 к.
Научный руководитель: Ткачёва Н.А.

Нобелевская премия по физиологии или медицине – это самая почётная награда за научные достижения в данной области. Она ежегодно присуждается Шведской королевской академией наук в Стокгольме.

С 1901 года 201 учёный получил Нобелевскую премию. Церемония проходит в Стокгольме 10 декабря, в день смерти Альфреда Нобеля. Как всегда, лауреаты получают диплом и медаль, а также денежное вознаграждение.

Лауреаты Нобелевской премии

Эмиль Адольф фон Беринг (Германия) был первым получателем Нобелевской премии в области физиологии и медицины за создание противодифтерийной сыворотки, которая подавляет дифтерийный токсин. Это открыло новые пути в медицинской науке и дало в руки врачей победоносное оружие против болезни и смерти.

Иван Петрович Павлов (Россия) удостоен премии за работу по физиологии пищеварения. Опыты, касающиеся пищеварительной системы, привели к открытию условных и безусловных рефлексов. Работы учёного, описывающие механизмы пищеварения, послужили толчком к возникновению нового направления-физиологии ВНД.

Илья Ильич Мечников (Россия) является одним из основоположников эволюционной эмбриологии, первооткрыватель фагоцитоза и внутриклеточного пищеварения, создатель сравнительной патологии воспаления, фагоцитарной теории иммунитета, основатель научной геронтологии (науки о старении, старости и долголетии). Совместно с Паулем Эрлихом (Германия) получил НП за труды по иммунитету.

Роберт Кох (Германия)- немецкий врач, бактериолог, один из основоположников современной бактериологии и эпидемиологии. Удостоен НП за открытие и выделение возбудителя туберкулёза. Разработал ряд новых методов в изучении микробов. Кох начал окрашивать бактерии и изобрёл твёрдые питательные среды.

Камилло Гольджи (Италия) совместно с Сантьяго Рамон-и-Кахаль, разделили НП за труды о структуре нервной системы. Гольджи классифицировал различные типы нейронов и сделал много важных открытий о строении отдельных клеток и нервной системы в целом.

Карл Ландштейнер (Австрия) врач и иммунолог. Открыл три основные группы крови у человека, что наряду с работами чешского врача-гематолога Я. Янского послужило основой для разработки вопросов, связанных с переливанием крови.

Александр Флеминг (Великобритания) в 1929 году установил, что один из видов плесневого гриба выделяет антибактериальное вещество- пенициллин. Так появилась эра антибиотиков, что сыграло огромную роль в медицине.

Франсуаза Барре-Синусси (Франция) открыла вирус иммунодефицита человека (ВИЧ), что стало предпосылкой для понимания биохимического механизма СПИДА и разработки его антивирусной терапии.

Виллем Эйнтховен (Нидерланды) удостоен премии за открытие механизма электрокардиограммы (ЭКГ). Он изобрёл струнный гальванометр, который произвёл настоящую революцию в изучении заболеваний сердца. С помощью этого прибора врачи получили возможность точно регистрировать электрическую активность сердца и с помощью регистрации устанавливать характерные отклонения на кривых ЭКГ.

Годфри Хаунсфилд (Великобритания) достоен НП за развитие компьютерной томографии. Его работа основывалась на усовершенствовании технологии компьютерной аксиальной томографии и близких к ней диагностических методов, таких, как ядерный магнитный резонанс.

ПРЕДСТАВЛЕНИЕ ГРЕКОВ И РИМЛЯН О ЗДОРОВОМ ОБРАЗЕ ЖИЗНИ

Проценко П. - к.
Научный руководитель: Ткачёва Н.А.

Среди многочисленных философских школ Древней Греции и Рима можно выделить два основных подхода к проблеме здоровья человека – оптимистический и пессимистический. Первый связан с философами, которые утверждали, что как бы ни были сильны удары судьбы, человек все-таки может быть здоровым и счастливым, если будет пытаться жить в согласии с природой и использовать для этого здравое рассуждение.

Характерной чертой древнегреческой культуры было большое внимание к физическим упражнениям, к закаливанию и в связи с этим к личной гигиене.

Специалисты заключают, что в Древней Греции средняя продолжительность жизни достигала таких вершин, которые затем были достигнуты лишь в XX веке.

Отмечается сходство античных взглядов на здоровый образ жизни и его составляющие с современным пониманием данной проблемы. Основы реализации задорого образа жизни пришли из прошлого.

ИЗ ИСТОРИИ КАФЕДРЫ

Рудых С. – 1 к.
Научный руководитель: Ткачёва Н.А.

Кафедра иностранных языков была организована в сентябре 1952 года и является ровесницей института.

Кафедра долгое время не имела своей базы. Занятия проводились во всех корпусах медицинского института. Первое помещение было выделено в 1960 – 1961 учебном году в корпусе по ул. Ленина, 124. Это была небольшая комната на третьем этаже здания, с которого началась жизнь Благовещенского медицинского института. Большая часть занятий по латинскому и иностранным языкам (английскому и немецкому) стала проводиться в этом же корпусе.

В 1976 году кафедру перевели в новое здание медицинского института, на первый этаж корпуса № 3. Это было довольно большое помещение: кабинет заведующего кафедрой, преподавательская, лаборантская и пять учебных комнат, которых было достаточно для обеспечения учебного процесса. Кафедра получила возможность наглядно оформить практикумы по английскому, немецкому и латинскому языкам, лингафонный кабинет.

В январе 1990 года кафедра получила новую прописку: улица Горького, 95, корпус № 1, третий этаж, левое крыло, где и находится по настоящее время. Это лучшее помещение кафедры за всю историю её существования.

15 сентября 1952 года был назначен первый заведующий кафедрой. Им стал Полуэктов Михаил Николаевич, кандидат ветеринарных наук, доцент. Полуэктов М.Н. окончил Казанский ветеринарный институт в 1929 году. В 1937 году защитил кандидатскую диссертацию, работал в Туркменском медицинском институте, опубликовал двенадцать научных работ. Кафедрой Михаил Николаевич руководил с 15.09.1952 года по 9.06.1953 года. Кроме этого, с 22 сентября 1952 года в течение нескольких месяцев исполнял обязанности директора БГМИ по научно-методической работе. На кафедре преподавал латинский язык. 10 августа 1954 года был избран на должность заведующего кафедрой фармакологии, где проработал до 28 августа 1957 года, уволился и выехал за пределы Амурской области.

На кафедре работали:

Лемпель Натан Максимович, с 1954 по 1956 г.

В совершенстве знал латинский, греческий, немецкий, французский и украинский языки.

В БГМИ работал преподавал медицинскую латынь. Бывшие студенты помнят Натана Максимовича как замечательного педагога, знавшего огромное количество латинских поговорок, пословиц, изречений, которые сыпались из него при каждом удобном случае.

В 1963 году Лемпель Н.М. издал «Сборник рецептурных упражнений» для студентов-медиков. В этом же году он выпустил «Латинско-русский словарь». В 1966 году вышло из печати его детище, учебник «Латинский язык», который был рекомендован Министерством здравоохранения СССР в качестве основного учебника по латинскому языку для студентов медицинских институтов. По этому учебнику студенты медицинских вузов занимались более 15 лет. За создание учебника Лемпелю Н.М. была присвоена степень доцента.

Вельдяксов Георгий Евстафьевич.

Преподавал латинский язык с 1956 учебного года. О нем вспоминают, что это был весёлый человек, но с характером. Работал в качестве преподавателя в разных вузах страны.

На кафедре есть преподаватели, посвятившие почти всю свою жизнь работе в БГМИ (АГМА). Это Зайкова Людмила Евгеньевна (с 1964 г.), Егорова Валентина Дмитриевна (с 1971 г.), Назаркина Светлана Ильинична (с 1976г.), Шпильчук Людмила Ивановна (с 1976 г.), Субачева Нина Анатольевна (с 1982), Ткачева Наталья Анатольевна (с 1993г.), Волосенкова Е.А. (с 1993г.)

ИЗ ИСТОРИИ РАЗВИТИЯ РУССКОЙ МЕДИЦИНСКОЙ ТЕРМИНОЛОГИИ

Мироненко О. – 1к.

Научный руководитель: Н.А. Ткачева

Исконно русская медицинская лексика уходит своими корнями в общеиндоевропейский язык-основу и общеславянский язык-основу, на базе которого в VII—VIII вв. возник древнерусский язык.

Многие древнерусские наименования болезней и их признаков вышли из употребления, некоторые изменили свое значение, а множество оригинальных русских наименований, бытовавших в языке древнерусской эмпирической медицины, не удержалось в языке научной медицины и уступили свое место другим наименованиям, чаще всего греко-латинского происхождения.

Проникновению грецизмов и латинизмов после принятия Русью христианства способствовали как непосредственные контакты с Византией и ее культурой, так и рост числа переводных церковнославянских сочинений.

В Петровскую эпоху и после нее, в течение всего XVIII в., в активно формирующийся русский литературный язык вливались сотни научных латинизмов как непосредственно из латинских сочинений, так и через западноевропейские языки.

В процессе формирования отечественной терминологии не было почти ни одного иноязычного термина, для которого не предлагалось бы разными авторами по несколько эквивалентов на русском языке. Далеко не все они выдержали испытание временем и были заменены терминами греко-латинского происхождения, в том числе неологизмами.

В течение всего XIX в. Русская медицинская лексика продолжала активно пополняться терминами, имевшими интернациональное распространение, преобладающую массу которых составляли классицизмы и неоклассицизмы, сохранившиеся до наших дней.

Во второй половине XX в. Медицинская лексика продолжала обогащаться интернационализмами. В современной русской медицинской терминологии интернационализмы и их русские эквиваленты выступают в качестве синонимов. При этом в одних случаях предпочтительно используется русский эквивалент. В других случаях предпочитаются интернационализмы.

Множество терминов греко-латинского происхождения, в том числе неоклассицизмов, проникало в русскую терминологию через посредство западноевропейских языков.

Многие термины, появившись первоначально в английском, французском или немецком языковом оформлении, подвергались одновременной или последующей формальной латинизации или же наоборот от латинизированного по форме термина — к его национально-адаптированному аналогу.

Традиционной особенностью медико-биологической терминологии продолжает оставаться применение termini technici — терминов, графически и грамматически оформленных на

латинском языке. Идентичность их понимания различными специалистами во всех странах делает termini technici незаменимым средством интернационализации терминологии.

Большие группы termini technici объединены в современные международные номенклатуры и имеют официально утвержденный международный статус.

ЛАТЫНЬ В СОВРЕМЕННОМ МИРЕ

Просянников А. – 1 к.

Научный руководитель: Шпильчук Л.И.

В русском языке очень много заимствованных слов. Без них сейчас мы не могли бы нормально общаться. Только нужно различать разницу между заимствованием – иноязычное вкрапление (слово сохранило свой иноязычный облик) и варваризмом (иноязычное слово в бытовом употреблении). Все слова по своему происхождению делятся на исконно русские и заимствовные (взятые из других языков). Все народы развиваются в тесном контакте между собой. Люди воюют, торгуют, путешествуют, получают образование или работают в той или иной стране. Естественно, что в свой родной язык они приносят слова, свойственные чужим народам или странам. Поэтому, процесс перехода элементов одного языка в другой при языковых контактах — совершенно естественная и органичная часть любой языковой культуры.

ЛАТЫНЬ ЭПОХИ ВОЗРОЖДЕНИЯ

Долгова К.-1к.

Научный руководитель: Субачева Н.А.

Латынь эпохи Возрождения, претендующая на роль международного научного языка а европейском регионе В ее обновлении активную роль сыграли анатомы, поскольку 16 век был веком анатомических открытий, а анатомическая терминология в то время была запутанной. В эпоху Возрождения латинский язык стал общепризнанным международным языком науки, на котором обменивались устной и письменной информацией, вели диспуты ученые. Именно в эту эпоху были заложены основы международной медицинской терминологии на латинском языке. Крупнейший итальянский анатом, творец научной анатомии человека А. Везалий преподавал анатомию на латинском языке. На нем же написан классический труд Везалия («О строении человеческого тела»). Везалий многое сделал для усовершенствования и уточнения латинских анатомических названий. Взяв за основу наименования, введенные Цельсом, он придал анатомической терминологии единообразие, выбросил за крайне редкими исключениями все средневековые варваризмы. Вклад анатомов Возрождения в развитие словаря анатомических терминов был огромным. К концу 18 в. Число анатомических наименований превысило 30000, в то время как от древних греков их было унаследовано лишь около 700.

ЛЕКАРСТВЕННЫЕ РАСТЕНИЯ АМУРСКОЙ ОБЛАСТИ И ДАЛЬНЕГО ВОСТОКА, ЗАНЕСЕННЫЕ В КРАСНУЮ КНИГУ

Тимонина А. -1 к.

Научный руководитель: Субачева Н.А.

На земле произрастают тысячи разнообразных растений. Среди них – большое количество лекарственных. Они встречаются в горах, лесах, на болотах. Благодаря широкому распространению, доступности и ценным свойствам лекарственные растения используются с древнейших времен. Опыт их применения накапливался веками и привел к созданию народной

медицины. Растительность области и Дальнего Востока богата и разнообразна. Главные ее особенности – обилие видов растений и контрастность растительного покрова. Флора насчитывает около 2000 видов высших растений их которых 21 редкий вид занесен в Красную книгу. Здесь сходятся, взаимно проникают и смешиваются представители нескольких флор: маньчжурской, охотско-камчатской, восточно-сибирской, тихоокеанской и монголо-даурской, т.е. сосуществуют растения а 3 климатических поясов: субарктического, умеренного и субтропического. Наш доклад содержит информацию о некоторых лекарственных растений , применяемых в медицине.

ЭТИМОЛОГИЯ НЕКОТОРЫХ АНАТОМИЧЕСКИХ ТЕРМИНОВ

Савосько А, Козлова А.-1к.
Научный руководитель: Субачева Н.А.

Раскрытие этимологии часто позволяет лучше понять , почему данный термин стал использоваться для обозначения определенного медицинского понятия. Этимология помогает восстанавливать древнейшие, за частую ошибочные, представления греков о причинах или патогенезе болезни.

Анатомия в соей номенклатуре использует некоторые названия и образы античной мифологии. Мифологические наименования могут принимать непосредственное участие в построении анатомического термина» tendo «Achillis» и другие примеры приведены в нашем докладе. Таким образом, латинская анатомическая терминология представляет собой строй ную систему названий, которая располагает рядом особенностей, отличающих ее от терминологических систем других научных дисциплин.

МЕДИЦИНСКАЯ ТЕРМИНОЛОГИЯ, КОМПЛЕКС ПАТОЛОГОАНАТОМИЧЕСКОЙ, ПАТОЛОГОФИЗИОЛОГИЧЕСКОЙ И КЛИНИЧЕСКОЙ ТЕРМИНОЛОГИИ

Яворская А.-1к.
Научный руководитель: Субачева Н.А.

Терминология это совокупность терминов в рамках определенного профессионального языка, не простая совокупность, а система. Каждый термин в ней занимает свое место, а все термины вместе взаимосвязаны. Терминология – не второстепенный и не сопутствующий компонент профессии, науки, а один из ее составляющих. В своем докладе даем информацию о комплексе патологоанатомической, патологофизиологической и клинической субтерминосистемах. Терминология таких наук, как патологическая анатомия и патологическая физиология включает научные понятия, выражающие патологические процессы; клиническая терминология включает научные понятия признаков болезней, синдромы, методы обследования, методы лечения, медицинский инструментарий и т. П; фармацевтическая терминология включает названия лекарственных форм, средств, растений.

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