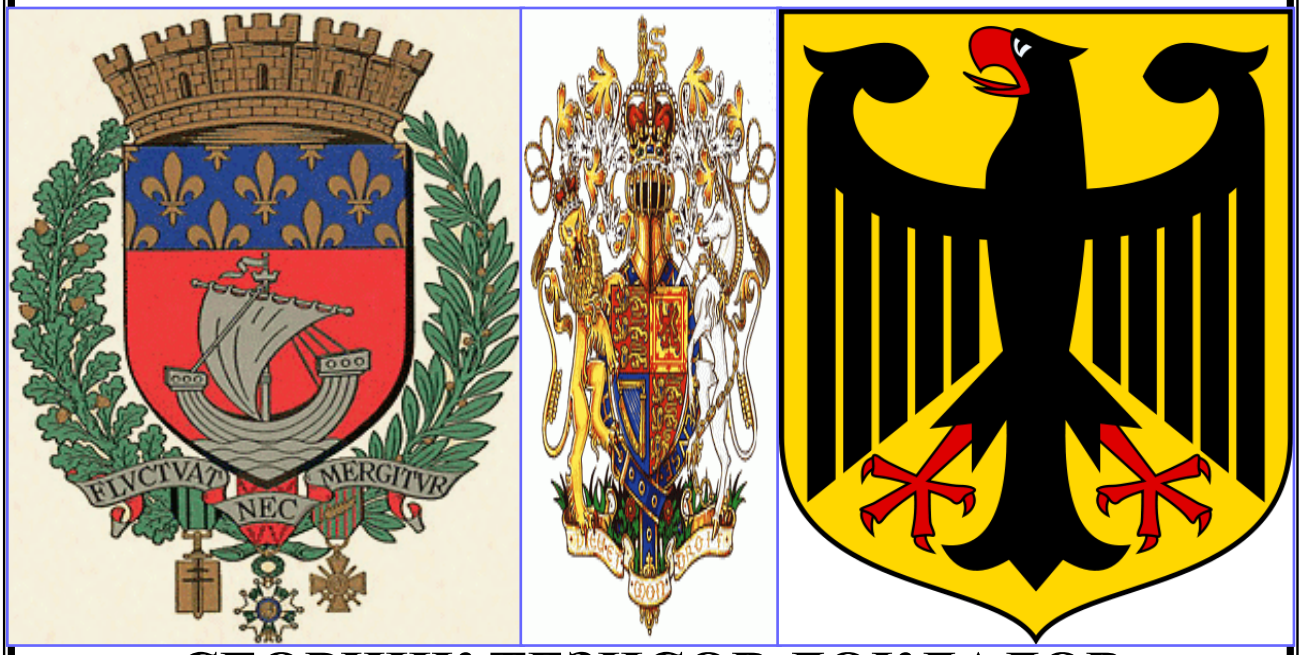
Министерство здравоохранения России
ФГБОУ ВО Амурская Государственная Медицинская Академия
Студенческое научное общество
Ministry of Public Health of Russian Federation
Amur State Medical Academy
Students Scientific Society



СБОРНИК ТЕЗИСОВ ДОКЛАДОВ

29я НАУЧНАЯ СТУДЕНЧЕСКАЯ КОНФЕРЕНЦИЯ НА ИНОСТРАННЫХ ЯЗЫКАХ

ABSTRACTS

29th SCIENTIFIC STUDENTS CONFERENCE IN FOREIGN LANGUAGES

23 декабря 2019 г.

БЛАГОВЕЩЕНСК 2019 г.


АМУРСКАЯ ГОСУДАРСТВЕННАЯ МЕДИЦИНСКАЯ
СНО
АКАДЕМИЯ

Министерство здравоохранения России

ФГБОУ ВО Амурская Государственная Медицинская Академия

Студенческое научное общество

Ministry of Public Health of Russian Federation

Amur State Medical Academy

Students Scientific Society

СБОРНИК ТЕЗИСОВ ДОКЛАДОВ

29Я НАУЧНАЯ СТУДЕНЧЕСКАЯ КОНФЕРЕНЦИЯ НА ИНОСТРАННЫХ ЯЗЫКАХ

ABSTRACTS

29th SCIENTIFIC STUDENTS CONFERENCE IN FOREIGN LANGUAGES

23 декабря 2019 г.

БЛАГОВЕЩЕНСК 2019 г.

Сборник тезисов докладов 29ой научной студенческой конференции на иностранных языках содержит тезисы 332 докладов, заслушанных на трёх секциях:

- Английского языка
- Немецкого языка
- Французского и латинского языков

Редакционная коллегия:

- **проф., д.м.н. Т.В. Заболотских**—ректор Амурской ГМА;
- **проф., д.м.н. С.С. Целуйко**—проректор по научной работе;
- **проф., д.м.н. Е.А. Бородин**—председатель Совета по НИИРС Амурской ГМА (ответственный редактор)
- **Н.А. Ткачева**— старший преподаватель кафедры философии, истории Отечества и иностранных языков;
- **Д.А. Григорьев —** председатель Совета СНО (технический редактор)

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

INHERITANCE AND DEVELOPMENT OF TRADITIONAL CHINESE MEDICINE

Gao Lu
Heilongjiang University of Chinese Medicine

The inheritance and development of traditional Chinese medicine is imminent.TCM students should realize the importance of inheriting and developing TCM.Students of traditional Chinese medicine should keep forging ahead and take inheritance as their responsibility.

GREAT DOCTORS ARE ABSOLUTELY SINCERE

Zhao Jingyu
Heilongjiang University of Chinese Medicine

As the development of science,people's medical care has been improved, when people get sick, they can go to the hospital and get the treatment, and then they will recover soon. Today western medicine is being ignored by more and more people. Compared to western medicine, Chinese medicine has its own advantages.

THE ORIGIN AND DEVELOPMENT OF TRADITIONAL CHINESE MEDICINE

Zhang Chao
Heilongjiang University of Chinese Medicine

Do you really know chinese medicine? Traditional Chinese Medicine is an indispensable part of Chinese culture. It has made great contributions to the prosperity of China. I think in the future, TCM will be the mainstream in the health services in China.

VIRTUAL OF GREAT PHYSICIAN

Miao Qianqian
Heilongjiang University of Chinese Medicine

Medical workers dream is writing. If one can sacrifice his life frequently lies in heroic a sense, isnt medical workers job great? If it isnt inveteracy, there isnt prosperous leaves and sweat-smelling flowers. Medical carrers are never an easy road, as we all know.

THE CULTURED MEAT: A MEAT REVOLUTION

LI Yanliang
Heilongjiang University of Chinese Medicine

Our meaty diet is making a greater impact on earth than ever. How are we going to make up to the increasing meat demands with less resource? A revolution on meat is coming towards us.

TRAINING FOR CLINICAL CHINESE MEDICINE AT HEILONGJIANG UNIVERSITY FOR CHINESE MEDICINE 2019

Krivutsa V.− the 3rd year student
Scientific leader —Katina O.I.

Our program included: 1) visiting the clinical base; 2) learning different methods of TCM: acupuncture (+ lectures), cupping, manual therapy, scraping; 3) Tai Chi (Taiji) exercises; 4) Calligraphy lessons; 5) visiting different attractions; 6) activities with Chinese students.Traditional Chinese medicine (TCM) is a branch of traditional medicine that is said to be based on more than 3,500 years of Chinese medical practice that includes various forms of herbal medicine, acupuncture, cupping therapy, guasha, massage (tuina), bonesetter (die-da), exercise (qigong), and dietary therapy, but recently also influenced by modern Western medicine. Ways of TCM treatment. Acupuncture is a form of treatment that involves inserting very thin needles through a person's skin at specific points on the body, to various depths for balancing the energy.

Cupping therapy is an ancient form of alternative medicine in which a therapist puts special cups on your skin for a few minutes to create suction. People get it for many purposes, including helping with pain, inflammation, blood flow, relaxation and well-being, and as a type of deep-tissue massage. Scraping guasha. Chinese massage therapy (Tuina推拿). Tuina is different from other forms of massage with specific emphasis on medical factor, such as treatment of specific illnesses related to internal organs, or muscular - skeletal systems as well. Tai chi. Tai chi combines certain postures, gentle movements, mental focus, breathing, and relaxation. Dermatology course is «Treatment of psoriasis with traditional Chinese medicines». Calligraphy. Calligraphy was the paramount visual art in pre-modern China. Using only brush and ink, calligraphers developed their techniques over generations.

THE SPINAL GANGLION IN NORMAL AND IN PATHOLOGY

Lyalina A. - the 2nd year student
Supervisors: V.S. Kozlova, E.A. Volosenkova

Intervertebral ganglia lie in intervertebral openings. They are surrounded by a thick connective sheath, from which numerous layers of connective tissue extend inside the organ, surrounding the body of each neuron in which the blood vessels are located. Front and rear roots are distinguished. The anterior root is the thinnest formation, consisting of pulp nerve fibers, which are T-shaped branching of processes of false unipolars. The posterior root is thicker than the anterior and contains many neurocytes.

The functional significance of intervertebral ganglia is very great, as they concentrate the bulk of sensitive neurons that supply both skin and internal organs with receptors. Each spinal node contains from 40 to 60 thousand nerve cells. Normally, small nerve cells constantly carry out pain information, and large nerve cells filter it and, if "do not find this information serious," close its access to the brain.

In case of hernias and protuberances (bulges) of intervertebral disks, spinal nodes experience increasing harassment. Ganglia, disturbed by the hernia of the disc is affected by the pain that covers the entire ganglia-controlled area of the body.

There are several causes of ganglionitis. The first one is the thinning of the intervertebral disk. Spinal nodes are located in the interval between adjacent vertebrae. When the hernia of the disc appears and the disc itself becomes thinner, the spinal unit is under pressure. The second

cause may be hernia of the intervertebral disk. Usually it is formed at the location of the spinal node and, so to speak, tries to pierce, pinch and push it away. Also the cause of ganglionitis is high venous pressure. Veins around and inside the spine, swell and press on the ganglia.

CONSEQUENCES OF THE AIR CRASH NEAR THE GREEK ISLAND OF POROS ON AUGUST 20, 2019

Lyalina A. - the 2nd year student
Supervisors: Can. Biol. Sc. L.F. Guba, E.A. Volosenkova

A private Agusta A-109 helicopter departed Galata and was en route to Athens Eleftherios Venizelos International Airport. Greek pilot Nicholas Karistinos was at the helm. The incident took place during the afternoon on August 20, 2019.

On the board, in addition to the pilot, there were citizens of the Russian Federation: Mikhail Abramov and Pavel Akulinin. The deaths of citizens were confirmed in the Russian consulate. Condolences to the relatives of the victims of the disaster were expressed. On a fateful day, Mikhail and Pavel rented a helicopter from a local entrepreneur to reach Athens. In addition to Abramov and Akulinin, there was another person on the board, a Greek pilot, who made a fatal mistake.

50 m from the shore, the helicopter collided with a power transmission line, followed by an explosion, and then fell into the water. No one survived the crash. After some hours, the bodies of the victims were taken from the water, but unfortunately without signs of life.

ABNORMALITIES OF THE BRAIN HEMISPHERES DEVELOPMENT

Lyalina A. - the 2-nd year student
Supervisors: Can. Med. Sc. S.S. Seliverstov, E.A. Volosenkova

Unfortunately, the congenital defect of brain development has a great number of varieties. Lets consider each of them. The hemispheres of the brain may be large, small, or asymmetric; they may be unusually enlarged or numerous and small. Moderate or severe delay in motor and mental development, and epilepsy are often noted in these defects. Hemispheres do not separate, being a single hemisphere. Lateral ventricles are also considered as a single unit. The shape of the skull is markedly impaired, there may be somatic defects. As a rule, such children are either born dead or die within the first 24 hours. Anencephaly is the absence of brain hemispheres. The missing brain is sometimes replaced by malformed cystic nervous tissue, which can be exposed or covered with skin. Parts of the brain stem or spinal cord may be missing or malformed. Hydranencephaly is an extreme form of porencephaly in which the hemispheres of the brain are almost completely absent.

SKIN DEVELOPMENT ABNORMALITIES

Zubova K. - the 2-nd year student
Supervisors: Can. Med. Sc. S.S. Seliverstov, E.A. Volosenkova

They are of two kinds: age (ageing) and congenital. Clinical morphological manifestations among congenital skin defects and its appendages include: hair growth disorder, keratinization, dysplastic genodermatoses, connective tissue abnormalities.

Hypertrichosis is an excess of hair; *Albinism* - absence (reduction) of melanin in skin, hair and iris; *Melanism* - diffuse hyperpigmentation (elbows, knees); *Lentiginosis* - abundant spills in the form of small dark pigment spots; *Ichthyosis* - skin damage with various clinical manifestations; *Pachionichia* - damage of nail plates (turbid thickened nails); *Dysplasia* - underdevelopment of epidermis and skin appendages; *Nevus* (native) - limited defect of skin development (hyperpigmented spots); *Hemangioma* - tumor growth of blood vessels; *Papilloma* - benign growth of epidermis; *Dermatolysis* - disruption of elastic fibres development; *Skin cysts* - dermoid, epidermoid and pilonidal; *Anonichia* - absence of nail plate; *Polymastia* is an excessive amount of mammary glands.

Degenerative changes are observed in embryonic tissue cells with age, as the cells, after serving time, stop division and die. Cells have age, too.

Processes of involution - age dystrophy of the skin usually begin after the age of 40 in the open areas of the skin. They are manifested by decreasing thickness of epidermis, hypoderma, length of follicles of long hair, atrophy of small sebaceous glands.

After the age of 50, these changes in the skin are increased, and dystrophy processes are also detected in closed areas; by the age of 60, all layers of skin become thinner; After 75 years of age, hypoderma is fully atrophied in many areas.

COMPARATIVE ANALYSIS OF ROAD ACCIDENTS IN THE REPUBLIC OF SAKHA (YAKUTIA) FOR 2018-2019

Zubova K. — the 2nd year student
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

In the Republic of Sakha (Yakutia), the number of deaths in road accidents has significantly decreased in the first eight months of this year. Alexander Orosin, Deputy Head of the UGIBDD of the Ministry of Internal Affairs for the Republic, said about it during the meeting of the Commission on Road Safety.

According to statistics, this year the mortality rate from road accidents amounted to 5.9 people per 100 thousand population, in 2018 the figure reached 7.6 deaths. The severity of the consequences of the accident - 7.1 deaths per 100 victims.

Orosin noted that the number of accidents with drunk drivers was reduced from 86 to 70, the number of people killed in them - from 24 to 15.

According to Orosin, 75% of the total number of accidents are registered in cities and settlements. 95 accidents were recorded on roads outside settlements, 78 of them - on federal roads. Orosin stressed that the work on detection of illegal transportation of passengers continues. During 8 months of this year 15 facts of provision of services for transportation of passengers which did not meet the requirements of safety were revealed.

WHY THE BATTERIES OF ELECTRIC SCOOTERS BLOW UP

Spitsyn A. — the 2-nd year student
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

During the last year, fires and explosions of electric scooters have been recorded, one of the most famous occurred in the Moscow suburbs, on the Khamovnichesky shaft.

Ignition of lithium batteries is due to a short circuit in its structure. The cause of a short circuit may be the following:

1. mechanical damage to the battery or wiring;
2. manufacturing defects — breach of the integrity of the porous separator due to careless cutting of electrodes and ingress of metal microparticles into the space between the anode and cathode;
3. overheating above 50 ºC;
4. excess of charging currents or boundary voltage;
5. sprouting of lithium chains through the separator — this defect appears due to charging with high currents, using or storing the battery in the cold.

How to prevent fire of the scooter battery

During operation of the electric scooter it is necessary to observe safety rules:

1. charge the battery with a working and compatible charger;
2. protect from mechanical damage and overheating;
3. do not put on charging immediately after staying in the cold — the battery should be kept for about an hour at room temperature, and then charged;
4. store in a dry place at a temperature from 0 to + 30 ºC, away from heating appliances and out of direct sunlight;
5. do not use if swelling, smudges or other signs of malfunction are detected;
6. do not disassemble;
7. do not deform;
8. do repairs and tuning in service centers by experienced craftsmen;
9. do not ride in the rain or in puddles, if the model used does not have the appropriate degree of tightness — if water gets inside, there is a great risk of short circuit when charging.

CONSEQUENCES OF DAM BREAKTHROUGH IN KRASNOYARSK REGION

Yunitskaya T. — the 2nd year student

Supervisors: Can. Biol. Sc. L. A. Guba, E.A. Volosenkova

In the morning of October 19, in the vicinity of the village of Shchetinkino, Kuraginsky district of the Krasnoyarsk territory on the Seiba River, the dam of the technological reservoir of the gold mining artel was destroyed. The incident occurred at about 6:00 according to the local time. The wave that broke through the dam reached a height of 4-5 meters and was a mudflow of clay, stones and mud. It was later specified in the RF IC, as a result of the breakthrough, five dams were destroyed, all structures were erected illegally. Two temporary dormitories were flooded in a working village, where up to 80 persons could be, 44 persons were injured, 17 persons died.

The damaged dam belonged to the Sibzoloto holding. Authorities said that it was built with a lot of violations and is not listed in Rostekhnadzor. Three suspects were arrested — the general director of the cooperative, the chief and foreman of the site.

ANOMALIES IN THE DEVELOPMENT OF THE LARYNX

Buyanov V. — the 2nd year student

Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

Congenital malformations of the larynx are a rare pathology. They represent relevance, as they are associated with a vital function — breathing.

Congenital laryngeal membrane. It is mainly observed in the anterior sections at the level of the vestibular and vocal folds, but can be in the sub-vocal section or at the entrance to the larynx, as well as in the intercarpal space. Sizes can range from a slight thickening of the tissues in the anterior commissure to almost complete atresia of the larynx. In most patients, thin small congenital membranes remain asymptomatic. Dysphonia (lack of voice), barking cough, inspiratory stridor are possible.

Anomalies of the cartilages of the larynx. They are the most severe pathologies. Softness and suppleness of the epiglottis are especially pronounced. It is elongated, curved in the form of a petal or folded into a tube and softened, as a result of which the scooped palatine folds are relaxed. During forced inspiration, they approach each other, stick and prolapse into the laryngeal cavity, making it difficult for air to enter with characteristic stridor noise. Other anomalies: absence, abnormal fusion and deformation of the plates of the thyroid cartilage; underdevelopment, small size, lack of a cricoid cartilage body or splitting of its posterior wall along the midline; violation of the shape and localization of arytenoid cartilages.

Congenital cysts of the larynx. Sometimes in these cysts, bone, cartilage and mucous glands can be found. They cause disorders of swallowing or phonation and breathing. Cysts restrained in the respiratory gap can cause an acute attack of suffocation as a result of a spasm of the glottis.

Congenital tumors. The most typical are vascular formations (hemangiomas, lymphangiomas and mixed tumors). They can be localized and common. In the larynx, true hemangiomas are most often observed. Hamartomas - tumors developing on the basis of tissue malformation; benign neoplasms. Depending on the location in the larynx, it can cause symptoms of obstruction, dysphagia, aspiration, hoarseness.

THE AFTERMATH OF TERRORISM AT KYOTO ANIMATION

Buyanov V. — the 2nd year student

Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

The arson was committed at about 10:35 a.m. on July 18, 2019 in building No. 1 of the Japanese studio Kyoto Animation. The arson claimed the lives of thirty-six studio workers and destroyed almost all the equipment and archives in the building. Thirty-five people, including the attacker, were hospitalized. A few weeks before the attack, anonymous threats began to arrive at the company's mail. According to the head of the studio, Hideaki Hatta, he does not know whether these threats are associated with arson, but he reported them to the police and lawyers.

Course of events. The fire in the building began with an explosion when the attacker entered the building and set fire. Just before the arson attack, the attacker doused some studio workers with gasoline, who subsequently ran out into the street, engulfed in flames. The fire that started at the entrance to the building did not allow those inside to leave it. The attacker fled the scene, but was soon caught by a studio employee, after which he was detained by police. The fire was extinguished at 15:19. After completion of the search, the exact number of deaths was confirmed. At 22:00, the fire department announced that the building was completely destroyed by fire. A fire system and hydrants were not installed inside the building. The last fire inspection, conducted on October 17, 2018, did not reveal any violations in connection with which the police also launched an investigation into the actions of the inspectors. The only suspect is Shinji Aoba, a forty one year old Japanese. According to current information, Aoba suffered from a mental disorder and had a criminal record. According to The Japan Times, due to the large number of victims, a suspect could be sentenced to death.

ABNORMALITIES OF THE STOMACH

Panova A. - the 2nd year student

Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

Congenital anomalies of the stomach, which arise under the influence of teratogenic factors in the first trimester of pregnancy are revealed. With severe stomach defects, the symptoms of the disease appear from birth. For example, atresia of the pyloric part of the stomach causes obstruction of the digestive tract in the first day. The anomaly is accompanied by the development of copious vomiting and scanty stool with a mixture of bile. Early appearance of symptoms is observed in agastria and agenesis of the stomach, however, such gross malformations of the stomach are extremely rare. Congenital stenosis of the pylorus leads to a slowdown in the passage of food into the intestine, causing the stomach to stretch. Already during the second or forth week of the child's life, the disease is manifested by persistent vomiting fountain and a progressive decrease in body weight, since nutrients are mostly absorbed in the small intestine. Excessively developed mucous membrane of the stomach in Menetriers disease is one of the most common vices. Clinically, the disease may not appear and is detected only on x-ray or during endoscopy. If hyperplastic processes affect the entire inner surface of the organ, symptoms of dyspepsia may be noted. The anomalies of the development of

the stomach also include congenital diverticula of the stomach, which are additional cavities. In rare cases, a complete doubling of the stomach may be detected. The disease is accompanied by the development of clinical symptoms only if the additional cavity of considerable size begins to squeeze the main stomach, or in the case of inflammation of the diverticulum. In such patients, the occurrence of abdominal pain, nausea, vomiting and stool disorders is noted.

COMPARATIVE CHARACTERISTICS OF AIR CRASHES OVER THE LAST 5 YEARS

Sinyakin I., Panova A. - the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

Statistics of the largest air crashes in the world for 1974-2019 year shows that the main cause of tragedies in the air-the human factor (error of the crew or Manager). The worst plane crash involving two Airliners occurred in 1977 in the Canary Islands - while trying to take off at Tenerife airport Boeing-747 of Dutch airline KLM in the fog crashed into a Boeing-747 of airline PanAm. The collision killed 578 people. The collision of the Airliners was due to a language barrier: the Dutch pilots did not understand the commands of the dispatcher, who spoke English with a Spanish accent. In 1985, there was a plane crash, which is considered a record for the number of passengers killed in the fall of one plane over the past 40 years. On Board of the crashed Japanese Boeing-747 there were 524 people, of whom only four escaped. The cause of Boeings crash was poor repair. On July 17, 2014, a Malaysia Airlines Boeing 777 crashed in the Donetsk region. The plane was EN route from Amsterdam to Kuala Lumpur. On Board there were 283 passengers and 15 crew members. All died. According to Wikipedia, the death toll of this disaster was the largest in the history of aviation since September 11, 2001 and was among the ten largest in history. On March 8, 2014, a Malaysia Airlines Boeing 777-200ER disappeared on a flight EN route from Kuala Lumpur, Malaysia, to Beijing, China. The plane disappeared in the sky over the South China sea 40 minutes after departure. There were 239 people on Board, including 12 crew members. The crash site and the cause of the plane's disappearance have not yet been established. In January 2015, Malaysian authorities officially declared all passengers and crew dead. The cause of the crash was called an accident.

MEDICAL AND BIOLOGICAL CONSEQUENCES OF FLOODING IN THE KHABAROVSK TERRITORY

Kudinova P., Kuzko A. — the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

The city of Komsomolsk-on-Amur in the Khabarovsk territory suffered great damage caused by a powerful Typhoon "linlin", which came there from China. The water level at Komsomolsk-on-Amur by the evening of September 7, 2019 reached 801 centimeters. The next morning, the level of Amur near the city exceeded the mark of the "dangerous phenomenon" by 150 centimeters. Because of the floods in the Khabarovsk territory, the emergency regime operated throughout September.

In addition to flooding in the city of Komsomolsk-on-Amur Typhoon "linlin" came from China, which brought with it heavy torrential rains. Because of the action of the Typhoon, water entered the city roads, because it was necessary to close storm drains to avoid the pressure of the waters of the Amur flood on the city center. In the flooded area there were 106 houses and 372 homesteads. People affected by the flood were immediately offered vaccination.
39 units of equipment were used to eliminate the flood. These are fire trucks, mobile pumping stations of the emergency department of Russia, as well as pumping units of different capacities.

BIOMEDICAL CONSEQUENCES OF EARTHQUAKES IN JAPAN OVER THE LAST 5 YEARS

Shatrov D, Likhno E. — the 2-nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

The catastrophic movements of the earth's crust on the Japanese Islands have been the cause of innumerable disasters at all times.

The earthquake in Kumamoto Prefecture on the island of Kyushu on April 14-17, 2016. The magnitude of the earthquake ranged from 6.5 to 7.3. 49 people died, 11 were missing, about 1,100 people were injured. It was the first major earthquake in Japan, killing more than 30 people since 2011. The city of Kumamoto was left without water. All residents of Nishihara village were evacuated due to fears that a nearby dam could break. Aso temple was badly damaged in the earthquake, the gate tower of the temple, officially classified by the Japanese government as a major cultural site, completely collapsed.

The earthquake in the Northern part of Osaka Prefecture on June 18, 2018. The magnitude was 6.1 on the Japan meteorological Agency's magnitude scale. At least 4 persons died, 423 persons were injured, and tens of thousands of homes were destroyed.

An earthquake in the Northern part of Hokkaido Prefecture on September 5, 2018 with a magnitude of 6.6. About 335 residents were affected, many homes and roads were destroyed, and power outages were caused in major cities.
The earthquake in Kamogawa city of Chiba Prefecture on October 12, 2019 with a magnitude of 5.7. One person died, four are missing, the number of injured - 50 people.
The large number of victims in Japan is due not only to the power of earthquakes, but also the density of the population in the country. In the country it is almost impossible to hide from the disaster, if you try to go away: in any region of Japan the disaster can cover. At the same time, in the face of tragedies, local residents show amazing solidarity. All forces rush to help the victims. This is inherent in Japanese culture.

BRAIN MALFORMATIONS

Shatrov D. — the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

The brain development anomalies are malformations, consisting of abnormal changes in the anatomical structure of cerebral structures. In severe cases, malformations are the cause of antenatal fetal death. They make up to 75% of fetal deaths, about 40% of newborn deaths.

Often they have nonspecific clinical symptoms: mainly epileptic syndrome, mental and mental retardation. The severity of the disease directly correlates with the degree of brain damage.

Anencephaly is the absence of the brain and acrania (absence of bones of the skull). The place of the brain is occupied by connective tissue growths and cystic cavities. Pathology is incompatible with life.

Microcephaly is a decrease in the volume and mass of the brain due to a delay in its development. Microcephaly accounts for about 11% of all cases of oligophrenia. With severe microcephaly, idiocy is possible. Often there is not only ZPR, but also a lag in physical development.

Macrocephaly is an increase in the volume of the brain and its mass. Partial macrocephaly occurs with an increase in only one of the hemispheres. The main clinical manifestation is mental retardation.

Holoproencephaly - the absence of separation of the hemispheres, as a result of which they are represented by a single hemisphere. Stillbirth or death on the first day is noted.

Agiria is the lag in the development of gyrus, a violation of the architectonics of the cortex. It manifests itself as a disorder of mental and motor development, paresis and various forms of seizures. It is usually fatal in the first year of life.

Hypoplasia / aplasia of the corpus callosum. Myoclonic paroxysms and flexion cramps, congenital ophthalmic defects, multiple chorioretinal dystrophic foci are characteristic.

Heterotopies are clusters of neurons at the stage of neural migration, delayed on their way to the cortex manifested by episindrome and oligophrenia. With a single heterotopy, epiprises usually debut after 10 years of age.

PATHOLOGICAL DEVELOPMENT OF THE UTERUS

Toroyan A — the 2nd year student

Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

A pathological change in the location, shape, size or proportion of an organ that occurs as a result of developmental disorders in the prenatal period is referred to pathological development of the uterus.

Any disturbances in the fusion process of Muller channels cause various variants of abnormalities in the development of the uterus in the form of partial or complete duplication. Sometimes, one of the canals is underdeveloped, which causes an asymmetry of the organ. A common pathology is a general uterine underdevelopment that occurs with later disorders of the process of mutual regulation of the ripening endocrine and reproductive systems of the fetus.

The appearance of abnormalities in the development of the uterus is facilitated by external adverse factors affecting the fetus during various periods of pregnancy, while the severity of the birth defect depends on the duration and period of exposure.\

THE ATTACK IN PARIS ON NOVEMBER 13, 2015

Toroyan A — the 2nd year student
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

In the late Friday evening on November 13, 2015, three coordinated terrorist groups launched a series of attacks in Paris (France).

In total, 130 people became victims of the attacks, more than 350 were injured. They were representatives of 19 nationalities.

The objects of the attacks were crowded places: suicide bombers carried out explosions near the Stade de France stadium in the northern suburbs of Saint-Denis, where at that time there was a match between the teams of France and Germany, popular cafes in the eastern part of central Paris were fired from submachine guns the Bataclan concert hall was invaded there. These attacks became the largest ones in terms of the number of victims in the history of France and the most widespread in terms of the number of victims of the attack on Paris since the Second World War. In the country, only the fourth time in its history, a state of emergency was introduced.

"The Islamic State" group banned in Russia claimed responsibility for a series of terrorist attacks in Paris.

Over 30 people were involved in the case of the terrorist attacks on November 13, 2015 in the capital region of France, of which 11 were dead, 12 were in prison, and others were wanted.

ABNORMALITIES OF THE LIVER

Sinyakin I. — the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

Liver abnormalities are rare, usually asymptomatic and are of clinical interest mainly in the differential diagnostic aspect. There are anomalies of position, shape and mixed anomalies. The true anomalies of the position include only casuistic cases of location of the liver in the left subphrenic space, despite the fact that the rest of the abdominal organs are in normal position. More often, the displacement is a consequence of other congenital diseases; right-sided diaphragmatic hernia, umbilical cord hernia, etc. The anomalies of the position include congenital hepatoptosis, often combined with enteroptosis. It is based on the inferiority and elongation of the ligamentous apparatus of the liver. Anomalies of shape can occur in the sizes of the liver, the depth of the furrows. It is common but does not affect organ function. Rare abnormalities include liver agenesis, congenital hypoplasia of the organ, the weight of which in adults is 1% of the body weight, at normal of 2-3%. According to V. G. Hakobyan, liver underdevelopment occurs in 25% of children with malformations and early postnatal portal vein thrombosis. The most well-known anomalies of the form are hypoplasia of the left and hyperplasia of the square lobe of the liver, congenital hepatomegaly in which the function and microstructure of the organ do not suffer. The liver may have an elongated outgrowth in the form of a "tongue" emanating from the edge of the right, square, rarely left lobe of the liver, called the" lobe " of Riedel who described it in 1888. It has normal morphological structure and functions, not manifesting themselves clinically, and detected during operations. It is noted, however, that in a third of patients, "Riedel's share" is combined with cholecystitis and after cholecystectomy can disappear independently. There are observations of the torsion of this

tongue-shaped protrusion, the development of intestinal obstruction due to soldering of the hepatic angle of the colon to it.

"BOTTLE MAIL" IN THE DIAGNOSIS AND TREATMENT OF CANCER

Derevyannaya V. — the 4-th year student
Supervisors: Can. Med. Sc. M.V. Sulima, E.A. Volosenkova

One of the promising directions of the molecular research in oncology is the study of exosomes. Exosomes are microvesicles with a size of 30-100 nm, transmitting information between cells, which were called “bottle mail”. They are synthesized by all cells of the body, but mainly by tumor cells.

Exosomes contain proteins, RNA, incl. microRNA, DNA fragments, that allows tumor cells to reprogram cells of the immune system, to form a premetastatic niche in any organs or tissues, and share resistance to the treatment with other tumor cells. Using molecular genetic analysis of exosomes, you can determine the key points of tumor biology, key mutations, determine the sensitivity and specificity to the treatment, determine the prognosis of the patient and monitor the response to the treatment.

In this paper, we consider several aspects of the use of exosomes in oncological practice, such as screening diagnostics of tumors by exosome analysis, transcriptome analysis to prescribe the correct therapy and monitoring the patient and tumor during treatment, targeted therapy using exosomes.

MODERN METHODS OF OBESITY TREATMENT. BARIATRIC SURGERY

Badieva S., Motalygina A. - the 3rd year students
Supervisors: Doc. Med. Sc., Prof. N.P. Volodchenko, E.A. Volosenkova

Bariatrics is a branch of surgery that treats obesity. Although in general, this term can be legitimately used in relation to any methods of reducing excess weight. However, historically, when people talk about bariatric techniques, they primarily mean overweight surgery. Bariatric operations that help to get rid of excess weight can be divided into three groups: restrictive operations that create a narrowing in the upper gastrointestinal tract and thereby reduce the amount of food eaten, malabsorptive operations that reduce the absorption of nutrients in the gastrointestinal tract and combined operations that combine both principles. Bariatric operations include: gastric banding, gastric bypass, biliopancreatic bypass, various variants of gastroplasty and intragastric balloon.

Currently, several standard operations are used in the world: adjustable banding, sleeve gastroplasty, gastric bypass, biliopancreatic bypass.

ABNORMALITIES OF THE CEREBELLUM DEVELOPMENT

Sayapina I. - the 2nd year student
Supervisors: Can. Med. Sc. S.S. Seliverstov, E.A. Volosenkova

Abnormalities of the cerebellum development are often associated with other disorders of the CNS organization, but can also occur in isolation. They include major disorders in the cerebellum morphogenesis and less pronounced disorders affecting mainly the organization of the cerebellar cortex. Combinations with various malformations of the brain stem are possible. Major syndroms: Dandy-Walker syndrome, Joubert syndrome, Meckel-Huber syndrome, PHACES syndrome, COACH syndrome, Tekto — cerebellar denorfia, Rhombencephalosynapsis.

Conclusion: early prenatal diagnosis allows you to confirm or exclude abnormalities in the development of the cerebellum and the fetus as a whole.

ANOMALIES OF THE TONGUE DEVELOPMENT

Pendyur V. — the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

The tongue is a muscular organ covered with a mucous membrane, involved in the mechanical processing of food, the act of swallowing, taste perception and speech formation. Disturbance of the normal course of tongue development leads to a number of congenital anomalies of this organ.

The most common anomaly is the shortening of the frenulum of the tongue, due to which the tip of the tongue is fixed to the bottom of the oral cavity and its mobility is impaired — ankyloglossia. In Robin syndrome gloops — a tongue, facing backwards is possible.

A characteristic malformation of the tongue is the splitting of the tip of the tongue due to incomplete fusion of the lateral tubercles. Sometimes, for the same reason, there is a deep slit (split tongue) on the surface of the tongue.

The disproportionate development of the tongue by surrounding tissues leads to the formation of an excessively large or small tongue. These anomalies are called macroglossia and microglossia, respectively.

A folded tongue is an anomaly in which the tongue is slightly enlarged but remains soft. The median longitudinal furrow of the tongue is much deeper than normal. In addition, there are a number of transverse and short longitudinal lateral furrows, resulting in folds.

A rare pathology is a goiter of the root of the tongue, which is either a dystopia, or the development of an additional thyroid gland.

STATE COUP IN VENEZUELA, 2019

Dedovets K — the 2nd year student
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

Press secretary for the office of the United Nations high Commissioner for human rights, Rupert Colville, said that as a result of the political crisis and street clashes in Venezuela, 42 persons were killed, Reuters reported on January 29.

It is noted that 26 persons were killed in clashes with Pro-government forces, five were killed during raids on the residence, another 11 were victims of robbery and looting.

Also 850 citizens were detained, 77 of them — children. On January 28, the Venezuelan monitoring center for social conflict counted 35 dead in Venezuela, ten of them - in the state capital. On January 23, the speaker of the Venezuelan Parliament, Juan Guaydo, announced himself as interim President. On the same day he was recognized by the United States, later-Canada, Georgia, Guatemala and a number of other countries. In response, Venezuelan President Nicolas Maduro, elected in may 2018, severed diplomatic relations with the United States and gave American diplomats 72 hours to leave the country.

According to the American media, only a part of diplomats who do not hold serious positions can leave Caracas. Russia, Cuba and Mexico expressed support for Maduro. Moscow called what is happening in Venezuela a quasi-coup with the participation of foreign States.

CAUSES OF DEATH IN THE TYUMEN REGION

Serga O. — the 2nd year student
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

An outbreak of a rare and very dangerous infection was recorded in the Tyumen region in the village of Achira, Tobolsk district. Ten persons were in a critical condition at the hospital. Two patients in a serious condition, remain in the intensive care unit. Eight patients had from mild to moderate conditions. Thus, six mild patients remain. All are residents of the same village. The diagnosis is Haff disease.

This disease is dangerous with the toxin that accumulates in freshwater fish. It can lead to seizures, failure of the heart, liver and kidneys. The carrier is fish. It accumulates a deadly toxin, which leads to dire consequences. Victims were saved. The whole catch is eliminated. Fishing was carried out in Lake Andreevskoye.

After a number of cases of poisoning local residents, as well as mass death of dogs in the vicinity of the reservoir, the authorities of the Tobolsk region banned fishing and collecting water here.

HISTO-PHYSIOLOGICAL CHARACTERISTICS OF THE OIFACTORY ANALYZER IN THE NORM AND IN PATHOLOGY

Serga O. — the 2nd year student
Supervisors: V.S. Kozlova, E.A. Volosenkova

The olfactory analyzer is a neurophysiological system, due to the activity of which the analysis of odorous substances entering the mucous membrane of the nasal cavity is carried out.

The olfactory analyzer includes 3 parts. The peripheral section includes the primary sensory receptors, which are the ends of the neurosecretory cell. The conductor section is represented by myelin-free fibers in the form of the olfactory nerve. The central section consists of the olfactory bulb, the cortical section is located in the hippocampus gyrus and in the ammonon horn.

Odorous substances in the air penetrate the olfactory surface by diffusion. Molecules bind to receptors. The signals from the receptor cells enter the glomeruli, then the signals are transmitted to the mitral cells, then to the area of the brain, where information from different receptors is combined, forming the general picture.

Atrophic rhinitis (ozena) is a chronic inflammatory lesion of the nasal mucosa. There is primary and secondary atrophic rhinitis. They differ in etiological factors, and the symptoms are similar.

With atrophic rhinitis, a decrease in the number of cilia of the ciliated epithelium is observed, their movement is slowed down and, as a result, the mucus thickens. Metaplasia into the stratified squamous epithelium in separate sections, infiltration of subepithelial tissue with the inclusion of Russell's bodies, and cicatricial degeneration of the stroma are noted.

With the progression of the disease, the patient complains of difficulty in nasal breathing associated with the accumulation of crusts, nosebleeds, as well as a decrease or absence of smell. If untreated, olfactory neuritis may occur.

THE CONSEQUENCES OF THE FIRE AT THE TANK FARM IN NOVOROSSIYSK

Murskiy P., Khan A. — the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

On November 7, an explosion at a tank farm thundered in the city of Novorossiysk. The Grushovaya oil depot is located in the Sheskharis area, an industrial zone, on the outskirts of Novorossiysk. At about 9:00 people heard the howling sirens. Flames swept 200 sq.m. . After 20 minutes, fire crews consisting of 90 people arrived at the scene of the emergency. 33 pieces of equipment were involved. Later it wasestablished that the fire occurred in the tank for underground storage of petroleum products. The cause of the emergency could be welding.

As a result of the fire, 6 people were injured, they received burns of varying severity, the lesion area was from 40 to 90%. Five of them with the help of air transport were delivered to Krasnodar to the Regional Clinical Hospital No. 1 named after Ochapovsky. The age of the victims is from 22 to 35 years.

After the incident, work at the transshipment complex continued as usual. This is not the first state of emergency at the facility. In June 2017, the pipeline caught fire there. Then one person suffered. The fire area was 4 square meters.

ASTRO- AND NOROVIRUSES. THE ROLE IN THE HUMAN PATHOLOGY

Spirina J. — the 3rd year student
Supervisors: Prof. G.I. Chubenko, E.A. Volosenkova

Despite the success of medicine, acute intestinal infections still remain one of the most significant health problems in all countries of the world without exception. The part of diseases of viral etiology among them is only growing, including astro- and norovirus infections.

Astro- and noroviruses are causative agents of acute infectious anthroponous diseases with fecal-oral transmission mechanism.

Astrovirus belongs to the Astroviridae family. Currently, 8 serotypes of astroviruses have been identified. Of particular importance are 1 - 5 serotypes. Most cases are associated with HAstV-1.

Noroviruses belong to the Caliciviridae family. They are divided into 5 genogroups (GI-GV), of which representatives of genogroup I are isolated exclusively from humans, II and IV - from humans and animals.

The main mechanism of transmission of the pathogen is fecal-oral, implemented by contact-household, food and water transmission. An aerosol pathogen transmission mechanism is possible. The incubation period is 12-48 hours, the duration of the disease is 2-5 days.

In the structure of intestinal diseases, norovirus infection accounts for 64%, and for astroviral infection - 6%.

In 2018 there were several massive outbreaks of norovirus infection: in the South Korean city of Pyeongchang during the Olympic Games - 283 cases of infection, in the children's camp of the Omsk region - 150 and in many other institutions.

Thus, it is necessary to be attentive to intestinal infections and to seek medical aid in a timely manner.

MODERN EVALUATION OF POSTOPERATIVE FACE LIFTING RESULTS

Shcherbakova T. — the 3-rd year student
Supervisors: Doc. Med. Sc. V.V. Grebenyuk, E.A. Volosenkova

Today, face lifting is one of the most popular anti-aging procedures among women, which provokes the production of collagen in the body, which is responsible for youth and elasticity of the skin. This protein is produced in the human body until the age of 25, and then this process is gradually reduced.

Indications for face lifting are: sagging facial contours, blurry fuzzy line of the chin, sagging skin with many wrinkles, loss of elasticity.

Lifting helps rejuvenate the skin, remove wrinkles, and the result is noticeable for a long time. However, serious complications can arise, which in the future will lead to irreparable consequences for the appearance of the face:

- Edema after a facelift;
- Hematomas in the field of surgical interventions;
- Inflammation of sutures;
- Necrosis of tissues;
- Suppuration of postoperative wounds;
- Postoperative scars;
- Hair loss;
- Postoperative bleeding
- Asymmetry of the face;
- Ptosis of the upper eyelid;
- The facial nerve damage.

Conclusion: face lifting is an intermediate link between cosmetic procedures and plastic surgeries. It has many advantages, but it is not suitable for everyone. Therefore, before deciding on a procedure, you should get the advice of an experienced plastic surgeon, who will help to avoid complications.

THE USE OF MINIMALLY INVASIVE TECHNOLOGIES IN THE COMPLEX TREATMENT OF ACUTE PANCREATITIS

Khripunova O. — the 3-rd year student
Supervisors: Doc. Med. Sc. N.P. Volodchenko, E.A. Volosenkova

Diagnosis and treatment of patients with acute pancreatitis is one of the most difficult problems in the abdominal surgery. For acute pancreatitis the third place in the structure of abdominal pathology is firmly established. The mortality rate in severe pancreatitis is 45%, and in the development of infectious complications reaches 85%. Currently, the widespread use of minimally invasive technologies for the treatment of patients with acute pancreatitis in combination with traditional surgical interventions has reduced postoperative mortality in destructive forms of pancreatitis.

The results of treatment of 973 patients with acute pancreatitis have been studied. The age of patients ranges from 19 to 87 years. Among them, 681 persons were of working age. The causes of acute pancreatitis in patients were cholelithiasis, alcohol intake, diet disorders, diseases of the stomach and duodenum, abdominal trauma. The diagnostic algorithm included the assessment of clinical and laboratory parameters, the study of the history of the disease, ultrasound, CT gastroscopy, laparoscopy indications. Open operations without the use of minimally invasive technologies were performed in 75 patients with destructive pancreatitis, indications in these cases were: widespread purulent peritonitis, biliary pancreonecrosis, extensive retroperitoneal phlegmons, abscesses. The following interventions were performed: treatment of the pancreas with subsequent drainage of the stuffing bag, opening and drainage of abscess or phlegmon of retroperitoneal cellular tissue, necrosectomy.

KWASHIORKOR

Skripnik V. — the 2nd year student
Supervisors: N.A. Feoktistova, E.A. Volosenkova

Protein deficiency during pregnancy leads to lower birth weight and greater adaptation to malnutrition. After the end of the period of malnutrition, there is often a rapid growth rate, catch-up growth.

Complete malnutrition: protein-calorie deficiency.

Partial malnutrition: a diet with enough calories but a lack of protein. Severe protein deficiency in childhood (1-4goda) leads to a deficiency disease called kwashiorkor. Symptoms include muscle atrophy, growth disorder, skin rash, swelling, depigmentation of the skin or hair. In children with kwashiorkor, the abdomen is stretched, it means a loss of tone of the abdominal muscles. The main cause of death associated with kwashiorkor is infection. Protein deficiency reduces the activity of the immune system. Regulation. When blood sugar levels are high, insulin

is released, which stimulates glycogenesis (the synthesis of glycogen from glucose). With low blood sugar and insufficient nutrition, glucagon is released, which stimulates glycogenolysis (the breakdown of glycogen into glucose). Another form of energy storage is represented by protein, since amino acids can be used as a source of glycogen synthesis.

CONSEQUENCES OF THE FIRE IN KRASNOYARSK

Skripnik V. — the 2nd year student
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

On September 16, 2019 there was a fire in a five-storey apartment building at the address: Krasnoyarsk, Gusarov str., 23. The first fire Department arrived on the scene 8 minutes after the message. Emergency crews found open flames from a window on the third floor. The fire was localized on September 16 at 23.04 (GMT) on the area of 40 square meters, and liquidated at 23.36 (GMT). 43 persons and 16 pieces of equipment were involved in extinguishing. Eight persons perished, four of them were minors. The victims of the fire were the prosecutor of Lesosibirsk Vasily Fedortsov, his wife and two children, as well as the family of his sister. One of the main versions is a short circuit of the wiring, which was old and could not withstand the high voltage that arose as a result of connecting several household appliances to one network. It short-circuited and smoked, everything happened at night and the owners of the apartment, the guests were already asleep, it was the cause of their death. There is also a version of careless handling the fire. Upon death of people criminal case on causing death by negligence is brought.

CONSEQUENCES OF THE EARTHQUAKE IN THE PHILIPPINES

Saryglar S. — the 2nd year student
Supervisors: Can. Biol. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

On July 27, 2019, a deadly earthquake struck the Philippines. At about 4 a.m., according to Moscow time, there was a series of 6 tremors, the magnitude of the strongest of which reached 5.7 and 5.9 on the Richter scale. In the country at this time there was a deep night, and many people were asleep. According to local authorities, it was the cause of death of 8 persons. About 60 persons were injured.

The exact number of victims is not specified. According to the US Geological survey, the epicenter of the strongest earthquake lay at a depth of about 10 km and was located 14 km East of the city of Itbayat, in the Philippine province of Batanes. According to eyewitnesses in the city and the surrounding area there are many destroyed public and residential buildings. In total, four earthquakes were recorded in the area of the Philippine island.

ANALYSIS OF EMERGENCIES IN BURYATIA RELATING TO THE ROAD TRAFFIC ACCIDENTS

Darmaeva D., Sanzhimitypova E. — the 2nd year students
Supervisors: Can. Biol. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

The article is devoted to the issues of accident rate analysis related to road transport. The analysis of road traffic accidents in the territory of the Republic of Buryatia has been made. The factors that influence on the risk of injuries and mortality are presented.

Over the past 4 years (2014-2018) there has been a decrease in the growth of the number of accidents, the number of deaths and injuries. It should be noted that the number of accidents caused by drunk drivers and pedestrians is also decreasing, although many organizational issues of interaction between different departments for providing medical assistance at the stages of evacuation have not been resolved. Death occurs in 10% of victims, and in 52% of cases they die at the scene.

BULLOUS EMPHYSEMA AND BULLOUS LUNG DISEASE

Maysak A., Chernysheva A., Leshtaeva Y. — the 5-th year students
Supervisors: Doc. Med. Sc. O.B. Prikhodko, Can. Med. Sc. I.V. Kostrova, E.A. Volosenkova

Terminologically bullous lung disease and bullous emphysema are distingvished. Bullous lung disease means the presence of one or more bulls among unchanged lung tissue, bullous emphysema is characterized by bulls on the background of diffuse emphysema. Bulla is a rounded air formation of the pulmonary parenchyma, having a reduced density, a diameter is more than 1 cm and surrounded by a thin (up to 1 mm) wall. It is believed that 12% of the population over the age of 30 have bullous changes. It is believed that bullae are formed due to degeneration and atrophy of the interalveolar septa with subsequent union of the alveoli, as well as the damage of the terminal bronchioles. The cause of bull is primarily smoking, and patients with bullous lung disease are usually younger than patients with bullous emphysema. The predisposing factor for the development of bull is a deficiency of α1-antitrypsin. Bullous lung disease can be asymptomatic. Giant bulls in some cases cause shortness of breath or respiratory failure. Other symptoms (cough, sputum production) are usually associated with concomitant COPD and other diseases. During physical examination, in large bulls a tympanic percussion sound and a weakening of breathing in the area of the bull may be registered. Some bulls may increase in size over time, others remain stable. Progressive giant bulls are also called disappearing lung syndrome. There are isolated reports of bull regress, usually in these cases these are bulls caused by an infection or tumor. It is known that bulls and pneumothorax can recur after bullectomy, often the formation of new bulls is registered in the contralateral lung.

CURRENT STATE OF NATURAL FOCALITY OF TULAREMIA IN THE TERRITORY OF THE RUSSIAN FEDERATION

Leshtaeva Y., Maysak A., Chernysheva A. - the 5-th year students
Supervisors: A.V. Gavrilov, E.A. Volosenkova

Synonyms: “small plague”, “plague-like disease”, “rabbit fever”.

Tularemia is an acute natural focal zoonotic infection with various transmission mechanisms, which occurs with fever, intoxication, the development of lymphadenitis, damage of the lungs, various organs and systems, as well as in the form of specific sepsis.

Pathogen - Francisella tularensis. Genus: Francisella. Family: Brucellaceae.

The source (over 84 species of animals): rodents, hares, arctic fox, sable, birds, dogs, cattle, pigs, sheep. Transmission among animals is mainly transmissible (ticks, horseflies, mosquitoes, fleas)

Ways of transmission in humans: contact, alimentary, dusty, transmissible. A person does not pose an epidemiological danger.

Active natural foci of tularemia in Russia exist in the Central Federal District, the Northwest Federal District, the Southern Federal District, the Volga Federal District, the Ural Federal District, the Siberian Federal District, and the Far Eastern Federal District.

Annually in the territory of 16 - 35 constituent entities of the Russian Federation, from 50 to 800 both sporadic and group cases of diseases of people with tularemia are recorded, among which 80% are urban residents. The incidence in the Russian Federation in 2004 made up 123 persons. 2005 - 881 persons (122 of them - children under 14 years old), 230 cases of tularemia were registered in Moscow. 2006 - 67 cases (12 of them are children under 14 years old). For 10 months of 2007, 79 people fell ill in the Russian Federation, among them one case of tularemia was registered in the Amur Region

ABNORMALITIES OF THE PANCREAS DEVELOPMENT

Dzhafarova D. - the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

Abnormalities of the pancreas (pancreas) are quite common. They can be as isolated defects of the organ, and a part of the complex associated anomalies. Most of them are found accidentally while examining patients for various diseases. Some of them have no great clinical significance, and others are accompanied by progressive atrophy or fibrosis of the pancreas, external (exocrine) and intersecretory (endocrine) insufficiency, which dramatically reduce the quality of life of patients and even lead to death.

Abnormalities of the pancreas, affecting its ducts, are manifested by symptoms of pancreatitis. There is a typical pain syndrome for diseases of this organ — cramping pain in the left hypochondrium and epigastrium, radiating into the spine. The inflammatory process in the gland causes intra-flow hypertension.

MEDICAL AND ENVIRONMENTAL CONSEQUENCES OF THE DISASTER AT THE MINES OF RUSSIA FOR FIVE YEARS

Dzhafarova D. - the 2nd year student
Supervisors: Can. Biol. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

According to statistics, Russian mines are considered one of the most dangerous in the world. If we analyze the causes of tragedies in mines, we can conclude that in the vast majority

of cases, people die because of methane explosions. The gas is concentrated in some part of the mine and, if it is not pumped out in time, then it easily ignites leading to an explosion. Often there is a series of explosions-the first raises in the air coal dust from the floor and walls, and if the source of the fire has not yet gone out, there is another, the most powerful explosion. Frequently victims of the second explosion are rescuers descending to help the miners. Situations with methane accumulation and explosions can be both natural and intentional. It is not a secret that in the pursuit of large volumes of coal production, the managers of mines neglect safety standards, ignoring or correcting the readings.

There is such a thing as the rate of fatal injuries per million tons of coal production. Behind this term is human life. Previously, there were 5-6 people per million tons. And now -0.2 per million. But on average, if we talk, it is 15-20 persons a year, if we mean in Russia. If we talk about emergency situations that occur, it is just a sudden collapse of rocks, improper operation of mechanisms (mining equipment) and, accordingly, the human factor - went to the wrong place.

ATHEROSCLEROSIS BIOCHEMISTRY

Lyalina A. - the 2nd year student
Supervisors: L.Y. Etmanova, E.A. Volosenkova

Atherosclerosis is a pathology characterized by the appearance of atherogenic plaques on the inner surface of the vascular wall. One of the main reasons for the development of such pathology is the imbalance between the arrival of cholesterol with food, its synthesis and removal from the body. In patients suffering from atherosclerosis, concentrations of LDL and LDL are increased. There is an inverse relationship between the concentration of HDL and the probability of atherosclerosis. It is consistent with perceptions of the functioning of LDL as HS carriers in tissues, and HDL from tissues.

The basic metabolic "prerequisite" for atherosclerosis development is hypercholesterolemia, it develops due to excessive intake of CS, carbohydrates and fats; genetic predisposition consisting in inherited defects of the structure of LDL receptors. Modification of LP plays an important role in the mechanisms of atherosclerosis development. Changes in the normal structure of lipids and proteins within LDL make them foreign to the body and therefore more accessible for capture by phagocytes.

Thus, biochemical studies have found that in the pathogenesis of atherosclerosis, it is not the quantitative content of cholesterol in the blood, but its qualitative changes and disruption of its ratios with other lipids, as well as proteins, that are of great importance.

SUDDEN EXANTHEMA IN CHILDREN AS THE MAIN MANIFESTATION OF INFECTION CAUSED BY HHV-6

Zvereva S. - the 5-th year student
Supervisors: T.A. Dolgih, E.A. Volosenkova

Now herpesvirus infections are cause of the development of many somatic and oncological diseases, they take the leading place among stillbirths, premature births, infant mortality,

newborn pathology, contribute to early disability of children. Herpesvirus infection is widespread, it has different variants of course and polymorphism of clinical manifestations. The main route of infection transmission is air-drop.

Clinically, HHV-6 infection manifests itself as a polymorphism of symptoms and can hide under masks of various infectious and somatic diseases. Sudden exanthemum is the most characteristic manifestation of primary HHV-6 infection and is its main manifestation. Rash is noted in 20-80% of cases. Duration of spills - from several hours to 1-3 days, disappear without trace. It should be noted that in rare cases complications such as encephalitis, meningitis, epilepsy are possible. The most common method of diagnosis is detection of HHV-6 DNA in blood plasma by PCR.

Difficulties of specific therapy of HHV-6 infection are related to genotypic features of the agent, various sensitivity to drugs, childhood age of patients. The main etiotropic drugs are three groups of drugs: acyclic guanosine analogs, interferons and immunoglobulins.

Taking into account the high prevalence in the human population, preferential development in the postnatal period, clinical similarity with various diseases, limited etiotropic therapy, it is necessary to examine children up to 1 year old with sudden exanthema in order to diagnose and prevent the HHV-6 infection in a timely manner.

COMPARATIVE CHARACTERISTICS OF LARGE FIRES IN CLUBS AND SHOPPING CENTERS IN RUSSIA

Pendyur V., Pendyur A. — the 2nd year students
Supervisors: Can. Biol. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

According to statistics, the third place due to the fire was divided between careless handling of fire and violation of safety during welding. In the second place there was the outbreak of fat deposits in the ventilation, which during cooking in restaurants and cafes are sucked into the kitchen hood and settle on the walls of the ducts. In the first place there were malfunctions of electrical appliances, leading to a short circuit, and then to a fire. On March 25, 2018, at about one o'clock Moscow time in Kemerovo, the “Winter cherry” shopping center caught fire. 64 people were killed and 51 were injured. The roof of the building descended. The fire killed about 200 animals in the contact zoo in the shopping center. On July 11, 2005 the shopping center "Passage" caught fire in Ukhta (Komi Republic"). The cause was a deliberate arson. As a result, 25 people were killed, another 10 received burns and injuries. On March 11, 2015, 17 people perished in a fire in the Kazan shopping center "Admiral", two are missing, about 70 persons were injured. On December 5, 2009, 156 persons perished and more than 80 suffered from burns and carbon monoxide poisoning at the “Lame horse” nightclub in Perm. According to the main version, the fire was caused by careless use of pyrotechnics in the club. The evacuation was complicated by the overcrowding of the room with lots of furniture and the narrow door opening of the main exit. On January 22, 2011 in Ufa 2 persons perished, 15 persons were injured as a result of a strong fire in the five-storey shopping and entertainment center "Europe".

BIOCHEMISTRY OF EMOTIONS

Pendyur V., Timets Y. — the 2nd year students
Supervisors: E.V. Egorshina, E.A. Volosenkova

Most human emotions have an important chemical, or rather neurotransmitter basis. That is, we experience this or that emotion when strictly specific substances are released.
The main mood hormone is serotonin, in case of its lack there is depression. Dopamine is responsible for feelings of pleasure, and endorphins cause joy, relieve stress.

Serotonin is a neurotransmitter which role is very great in the human body: in the front part of the brain, the areas responsible for the process of cognitive activity are stimulated. Serotonin entering the spinal cord has a positive effect on the motor activity and muscle tone. An increase in serotonin activity creates a feeling of a good mood in the cerebral cortex. In various combinations of serotonin with other hormones-we get the whole range of emotions of "satisfaction" and "euphoria". In addition to mood, serotonin is responsible for self-control or emotional stability. Dopamine is a hormone that is responsible for motivation. If its level in the blood is sufficient, the person feels that he is ready to commit an act. Dopamine gives a sense of satisfaction and joy from what we do every day. At its low concentration we have passivity, we are dissatisfied with ourselves and the world around us. Endorphin is a multifunctional hormone. It increases stress resistance, helps to reduce pain, affects the gastrointestinal tract, etc.

CONGENITAL ANOMALIES OF THE IRIS

Pendyur V. — the 2nd year student
Supervisors: N.P. Krasavina, E.A. Volosenkova

The iris of the eye is part of the adaptation apparatus of the eye, located between the cornea and the lens at the border between the anterior and posterior chambers of the eye. There are 5 layers: 1) anterior epithelium; 2) outer boundary layer; 3) vascular layer; 4) inner boundary layer; 5) pigment epithelium.

Aniridia is absence of the iris of the eye. Sometimes it can be caused by a penetrating wound of the eye, but congenital aniridia caused by genetic pathology is more common.

Coloboma is a defect in the membranes of the eye, due to the fact that during the 5 week of embryogenesis, there is no fusion of the embryonic tissue of the eye.

Polycoria is congenital plurality of pupillary openings - a very rare bilateral anomaly in which each iris may have 2-3 pupillary openings. Each has its own sphincter and responds to light and convergence.

Heterochromia is characterized by different color of the iris of the right and left eyes or different color of different parts of the iris of one eye. It is the result of a relative excess or lack of melanin (pigment). A special form of heterochromia is Fuchs heterochromia. Sympathetic dysfunction was considered as the cause of the disease. Deterioration of innervation of the iris stroma affected melanocytes and could lead to hypopigmentation of the iris, in addition, disorder of innervation can lead to the damage of the hematoophthalmic barrier and penetration of proteins, cells and other products of inflammation into the anterior chamber. Another cause of Fuchs heterochromia may be toxoplasmosis.

OPTICAL ISOMERIA AND LIFE

Podsosova A. - the 1st year student
Supervisors: N.A. Feoktistova, E.A. Volosenkova

Chemists often consider enantiomers as one compound, however, their biological activity can be completely different.

Various biological effects of the “right” and “left” isomers are manifested not only among drugs, but also in compounds interacting with living organisms. A striking example is the amino acid - isoleucine: its dextrorotatory isomer is sweet, and levorotatory is bitter. And carvone is a substance with a very strong aroma (the human nose feels it when the air contains only 17 parts per million milligrams per liter). Carvone is isolated from caraway seeds, the oil of which contains about 60% of it. However, the same compound with the same structure is found in curly spearmint oil, where its content reaches 70%. The smell of mint and caraway seeds is not the same, this is due to the presence of the “right” and “left” carvon. The difference in smell of these compounds indicates that nasal receptor cells responsible for odor perception must also be chiral.

Many drugs are currently available as optically pure compounds. They are obtained in three ways: separation of racemic mixtures, modification of natural optically active compounds (these include carbohydrates, amino acids, terpenes, lactic and tartaric acids) and the direct synthesis.

ANTIBIOTICS. PENICILLIN

Gasymova N. — the 1st year student
Supervisors: N.A. Feoktistova, E.A. Volosenkova

Antibiotics are substances synthesized by microorganisms and can interfere with the development of microorganisms. A. Flemig in 1929 for the first time was able to observe the antimicrobial activity of green mold.

Flury isolated the sodium salt of penicillin from this mold in 1940. In the USSR, the first samples of penicillin were received in 1942 by microbiologists Z.V. Ermolyeva and T.I. Balezina.

Penicillin is a fungus. The structure of penicillin is based on penicillic acid, which contains two condensed heterocyclic rings: four — segmented — lactam and segmented-thiazolide. Penicillins can be leached from natural materials biosynthetically or by a combination of biological and chemical synthesis methods. Chemical basis of antibacterial action of penicillin is the following:

1. Penicillins inhibit one of the last stages in the formation of peptidoglycan structure of bacteria cell wall.

2. Penicillin inhibits the enzyme only in microorganisms. The enzyme system of the animal body, unable to use d-series amino acids, is not affected.

Among natural penicillins, benzylpenicillin exhibits the least toxicity. Currently semi-synthetic penicillins, resistant to acids and lactamases are synthesized and widely used. Among them, first of all it is necessary to mention phenoxymethylpenicillin, ampicillin, amoxicillin.

DRUG-INDUCED LIVER INJURIES

Chichilimov A. — the 3rd year student

Supervisors: Prof. N.V. Simonova, E.A. Volosenkova

One of the pressing problems of modern Russian medicine is the sale of non-prescription drugs in the pharmacy network, which leads to the uncontrolled intake of medicines by a number of patients. Polypharmacy is one of the most important reasons for the constant increase in the use of various drugs, both in connection with the prescriptions of doctors and without them.

Among the side effects of many drugs, hepatotoxicity is often recorded, including various liver lesions, starting with an asymptomatic increase in the level of liver enzymes to acute hepatitis with a severe, and extremely rapid course of the disease, leading to fatal outcomes. In addition, almost any drug, depending on the dose, can cause liver damage. Currently, more than 1000 drugs are described which cause hepatotoxic reactions, the frequency of which development is 6-8 per 100,000 patients. In the developed countries, medication is a leading cause of liver failure requiring liver transplantation. In this regard, early recognition of medicinal liver injury in order to timely withdraw drug and conduct appropriate corrective therapy is very relevant.

Prevention of complications of the liver should be based, first of all, on the competent use of drugs with hepatotoxic effects, taking into account contraindications to their prescription, individual selection of the drug dose for each patient and periodic monitoring of liver functions. It is very important to warn the patient about the danger of reusing a drug that previously caused the liver dysfunction, and uncontrolled use of drugs without consulting a doctor.

RELEVANCE OF THE STUDY OF CONGENITAL MALFORMATIONS (CM) BASED ON THE EXAMPLE OF ESOPHAGEAL ATRESIA

Bogovin M. — the 1st year student

Supervisors: Prof. E.N Gordienko, E.A. Volosenkova

The innate developmental defects are the specific anomalies of the development, deviation from the normal structure of the human organism, which appear during the intrauterine period. Urgency and aspects of the study of atresia of the gullet are substantiated here. EA - the innate developmental defect with the partial absence of the gullet, presented by the separated between themselves proximal and distal segments. In the early embryonic period (first 2 - 3 weeks) the pharyngeal gut, which gives the beginning to the organs of respiration and digestion is formed. Toward the end of the 4th week pharyngeal gut is divided by longitudinal wall into 2 tubes: front — respiratory and rear — esophagal. If to the 4-5 weeks of i/u development their separation does not occur, tracheo- esophagal blowhole is formed and upper end of the gullet is not connected with the lower — atresia of the gullet.

Atresia of the gullet in the pediatrics relates to the severe defects, incompatible with life without an early surgical intervention. In 6-10% of cases atresia of the gullet is encountered with the chromosomal diseases.

One of the clinical cases in Blagoveshchensk was studied (24.10.2017). The doctors of ARCCH conducted the low-traumatic operation for the two-day newborn. After operation the child went to recovery.

To prevent genetic diseases it is necessary to pass through medico-genetic consultation and prenatal diagnostics. It makes it possible to decrease the risk of child birth with the diseases, caused by genomic factors.

LUNG ABNORMALITIES

Kryachek D. — the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

Embryology. Malformation of lungs and bronchi may be the result of deviations in the development at all stages of organ formation.

Congenital hypoplasia and dysplasia of the lungs is a defect in which the growth of terminal bronchioles occurs with the formation of cysts of different sizes that do not affect the alveoli. The lung tissue involved in the pathological process is supplied with air from the main respiratory tract through the pores of Kon, and with blood from the pulmonary artery. In almost all cases, the disease affects one lung (80-95%). Detection rate averages 14 per 10,000 cases (0.14%).

Congenital lung cyst - malformation of one of the small bronchi, appears as a rounded cavity thin-walled formation, lined with epithelium inside and containing mucous liquid or air. The frequency of occurrence varies in the range from 1: 11000 to 1: 35000 (<0.01%)

Congenital lobar emphysema is a malformation characterized by distension of the parenchyma of the lung lobe or segment, the absence of intralobular bronchi, terminal respiratory bronchioles and alveoli. This defect can be caused by the following three malformations: 1) smooth muscle aplasia of the terminal and respiratory bronchi; 2) the absence of intermediate generations of the bronchi; 3) agenesis of the entire respiratory department of the lobe. The incidence rate is very small and ranges from 1: 70,000 to 1: 90,000 live births.

HISTOPHYSIOLOGY OF THE BLOOD-GAS BARRIER IN A NORMAL STATE AND IN PATOLOGY

Kryachek D. — the 2nd year student
Supervisors: V.S. Kozlova, E.A. Volosenkova

Blood-gas barrier is a very thin multilayer structure between the air and blood capillaries, which determines the exchange of oxygen and carbon dioxide by the vectors of their partial pressures between blood and atmospheric air.

Blood-gas barrier consists of surfactant, the 1st order alveolocytes, common basal membrane, blood capillaries. An important part of BGB is a surfactant - a substance consisting of two phases. They are: hypophase (the lower one, which consists of tubular myelin, which has a trellised appearance and smoothes out bumps of the epithelium) and apophase (surface monomolecular membrane of phospholipids, facing the alveolar cavity with hydrophobic sites).

Surfactant functions include: reduction of surface tension on the surface of the alveoli, regulation of the number of macrophages, decongestant function.

In various pathologies of the lungs, changes in the ultrastructure and function of BGB are also observed- dystrophy, dysregeneration of capillaries, changes in the cellular composition, in the configuration of the general structure of BGB, the main disorders of this barrier are associated with a change in its permeability and a disturbance of the anti-edema function of the surfactant, which leads to a disturbance of gas exchange in the lungs.

ANOMALIES OF THE DEVELOPMENT OF THE BRAIN STEM

Bondarenko K. — the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

The brain stem is a combination of structures, which includes the medulla oblongata, the pons and the midbrain. The brain stem is a structure that includes a large number of vital centers, therefore, often a damage of this area of the brain leads to a disorder. Often anomalies of this part are associated with anomalies in the development of the skull. An example of such anomalies is:

Chiari Syndrome (Arnold-Chiari malformation or cerebro-medial anomaly) is a malformation of the subtentorial structures of the rhomboid brain, which are manifested by the omission of the brain stem and tonsils of the cerebellum in the large occipital foramen. It is often combined with abnormalities of the bones of the base of the skull and upper cervical vertebrae (Platybasia, basilar impression, assimilation of atlant, Klippel-Feil syndrome). The frequency of this disease is from 3.3 to 8.2 observations per 100,000 population. The average age of the patients is 25—40 years (can occur from 5—7 years of age).

MORPHOFUNCTIONAL CHARACTERISTICS OF THE RETICULAR FORMATON IN THE NORM AND PATOLOGY

Bondarenko K. — the 2nd year student
Supervisors: V.S. Kozlova, E.A. Volosenkova

The reticular formation is a set of nerve cells and their processes located in the upper part of the spinal cord and the covering of all levels of the stem between the nuclei of cranial nerves, olives, passing here afferent and efferent pathways (the reticular formation sometimes includes some medial structures of the intermediate brain).

The neurons of the reticular formation are called multimodal wherever there are synaptic switching, the line is open for signals from other neurons. The vast majority of neurons belong to neurons of such a non-specific nature. They are located spreading their dendrites at a distance of several millimeters, as if trying to catch signals of any kind. The axons of the cells of the reticular formation disperse throughout the brain, providing communication and support for various brain structures.

The reticular formation is very closely connected with the cranial nerves, providing their functions through them. There are also close ties with the cerebral cortex, providing regulation of its activity.

ARVI EPIDEMIOLOGY

Diyanshina S., Makitryuk D. — the 3rd year students

Supervisors: Prof. G.I. Chubenko, E.A. Volosenkova

The incidence of influenza and ARVI is pronounced and seasonal in nature. Influenza viruses belong to the family Orthomyxoviridae. The beginning of the circulation of influenza viruses in recent years falls at the end of autumn - the beginning of winter with a peak in January - February. Strains of influenza viruses are constantly evolving. In the epidemic season of 2019-2020 years according to WHO data, the highest activity of three strains of the influenza virus is expected in the world: a virus similar to A / Brisbane / 02/2018 (H1N1) pdm; A / Kansas / 14/2017 (H3N2) - a similar virus; influenza virus B / Colorado / 06/2017 (line B / Victoria / 2/87); virus similar to B / Phuket / 3073/2013 (line B / Yamagata / 16/88). This is taken into account by WHO while developing recommendations for the composition of influenza vaccines for the current season.

In the second place of importance is RSV. This is an RNA-containing virus from the Paramixovieidae family of the Pneumovirus genus. The duration of the epidemic rise in the incidence is limited to 3-5 months. According to epidemiological studies, up to 60% of children become infected with RSV during the first epidemic season, and almost all children become infected by the age of 3 years.

Human metapneumoviruses belonging to the Paramyxoviridae family, are an RNA-containing virus. Human metapneumovirus is the second most common etiological agent that causes bronchiolitis in young children after RSV.

According to domestic researchers, children experience two seasonal rises in acute respiratory viral infections of metapneumovirus etiology: the first begins in November, gradually ends by the end of winter, successively giving way to PC viruses, influenza and parainfluenza; the second - in May, which is gradually replacing PC viruses.

Thus, ARVI virus strains are constantly evolving and the spectrum of circulating variants is variable.

ROLE OF METAPNEUMOVIRUSES AND BOCAVIRUSES IN ARVI STRUCTURE

Getmanov A. — the 3rd year student

Supervisors: Prof. G.I. Chubenko, E.A. Volosenkova

Human Metapneumovirus (HMPV) is included in the Pneumovirinae subfamily, (a family of Paramyxoviridae). They occupy one of the leading places in the etiology of acute respiratory infections, especially in young children. HMPVs have been identified as a new type of metapneumovirus (MPV). HMPV is the next causative factor after the PC virus in the development of bronchiolitis. Most respiratory diseases associated with HMPV are found in children in the first 2—3 years of life. This age category represents a risk group for the development of a severe infection associated with this virus in the form of severe bronchiolitis, alveolitis. There is evidence that HMPV infection in infancy may be responsible for the

formation of bronchial asthma and recurrent croup in older children. Among the complications of HMPV infection, acute otitis media, pulmonary atelectasis, and pericarditis are described.

A new respiratory virus - bocavirus (HBoV) is isolated from nasopharyngeal samples of children with acute diseases of the upper and lower respiratory tract of unknown etiology. The virus is classified as a DNA-containing virus belonging to the Parvoviridae family, Parvovirinae subfamily, single-stranded DNA.

Currently, 4 genotypes of HBoV1—4 bocavirus are known. HBoV1 is the cause of respiratory diseases in children; HBoV2-4 are most often detected in patients with symptoms of gastroenteritis. Often in bocavirus infection, there is a combined lesion of the respiratory tract and gastrointestinal tract in the form of gastroenteritis. In gastroenteritis associated with HBoV, in addition to diarrhea, an increase in body temperature was observed in 62—68% of patients, vomiting in 32—38%, rhinorrhea and cough in 25—56 % J. I. Lauetal was observed in 7 patients in addition to gastroenteritis ARI NDP (in 3 patients (12%) - pneumonia, in 4 (16%) - bronchiolitis.

Conclusion: thus, the constant selection of viruses, the causative agents of acute respiratory viral infections, leads to the emergence of new types of viruses, which are becoming more dangerous and actively affect the life and health of people.

SEA TRIP IN KRASNODAR REGION ENDED IN TRAGEDY

Morozova A., Tsareva A. — the 2nd year students
Supervisors: Can. Biol. Sc., Assoc. Prof. L.A. Guba, E.A. Volosenkova

Pleasure boat "Atoll", capsized in the Black sea, near the village Dzhubga of the Krasnodar region, was overloaded almost five times. It was reported by the press service of the southern investigation Department on transport of the RF IC. The ship capsized and went down in the evening of July 5, 100 m from the shore. The victims of the accident were: 42-year-old tourist from Belgorod and 34-year-old vacationer from Mordovia. There were at least 55 passengers on Board, including 12 children. At the same time, the capacity of the boat was only 12 persons, taking into account the crew. All other passengers were found, their hospitalization was not required.

Upon incident criminal case under part 3 of Art. 238 of the criminal code of the Russian Federation ("Performance of works or rendering the services which are not meeting safety requirements") was brought. At the moment the owner of the capsized boat and the skipper are detained. The latter may be taken into custody.

THE ROLE OF HYALURONIC ACID IN METABOLISM

Morozova A., Tsareva A. — the 2nd year students
Supervisors: Can. Biol. Sc., Assoc. Prof. E. V. Egorshina, E.A. Volosenkova

Hyaluronic acid is found in many organs and tissues. In cartilage, it is associated with protein and participates in the formation of proteoglycan aggregates, in some organs (the vitreous body of the eye, the umbilical cord, articular fluid) it is found in free form.

Role: It is the basis of hydrated intercellular matrix-physiological environment for migration, division and differentiation of cells. It regulates the synthetic activity of fibroblasts, including the extracellular stage of collagen synthesis. It has an indirect immunomodulatory effect (both stimulating and suppressing the immune system). It provides transport of nutrients

and signaling molecules from blood vessels to cells, as well as excretion of waste products. Promotes drainage and deoxidation of connective tissue, is a "trap" for free radicals. It provides tissue regeneration and damage repair (plastic function). Participates in the regulation of angiogenesis and regulates tissue morphogenesis during embryonic development.

IMMUNODIAGNOSIS OF SYPHILIS IN CHILDREN

Privalova U. - the 3rd year student
Supervisors: Prof. A.V. Prokopenko, E.A. Volosenkova

Treponema pallidum is the causative agent of syphilis.

Syphilis is a cyclic venereal disease of a person. The causative agent-Treponema pallidum - was discovered in 1905 by F. Shaudin and E. Hoffmann.

The following methods of research are used in diagnostics:

1) direct immunofluorescence reaction (RIF) (detection of the virus in scrapes from the oral mucosa, skin, external genitals);

2) complement binding reaction (RSC) (detection of antibodies to pale Treponema antigens (lipoproteins) in serum);

3) the precipitation reaction of the plasma with cardiolipin antigen;

4) microprecipitation reactions with cardiolipin antigen (study material-blood serum or cerebrospinal fluid);

5) the reaction of indirect hemagglutination (RIHA).

The disease can be transmitted to children during their stay in the womb, together with the infected placenta, or during childbirth. The disease can negatively affect not only the pregnant woman, but also the baby and his development.

Types of syphilis:

1) early congenital (up to a year;

2) early childhood - in children from one to four, manifested by a characteristic lesion of the vessels and nervous system; paralysis, strabismus, blindness are possible;

3) late congenital (in children older than four years) manifested by the following signs:

- absolute (when there is deafness, keratitis and a special arrangement of teeth);

- relative, which include saber-shaped shins, terrible-looking teeth, a change in the shape of the nose, a buttock-shaped skull, a Gothic sky.

OBESITY STATISTICS OF CHILDREN FROM 0 TO 18 YEARS IN THE AMUR REGION

Pnivchuk A. - the 3rd year student
Supervisors: O.V. Zhuravleva, E.A. Volosenkova

Obesity — excess fat deposits in the subcutaneous tissue, organs and tissues. It is manifested by an increase in the body weight by 20 percent or more of the average values due to adipose tissue. The risk of atherosclerosis, coronary heart disease, hypertension, myocardial infarction, stroke, diabetes, kidney and liver damage, as well as disability and mortality from these diseases increases.

A number of factors contribute to the development of obesity: a low-active lifestyle; genetically determined disturbances of the enzymatic activity; errors in the diet (excessive consumption of carbohydrates, fats, salt, sweet and alcoholic beverages, eating at night); some endocrine pathologies; physiological conditions (lactation, pregnancy, menopause); stress, lack of sleep, taking psychotropic and hormonal drugs.

According to the presented statistics, it is possible to trace the dynamics of this disease in the Amur region.

Absolute numbers in children from 0 to 14 years in 2016 - 2.649, in 2017 - 3063. In the ratio per 100,000 children in 2018-1726,6, in 2019 -1988,3.

Absolute numbers in children from 15 to 17 years in 2016 - 1054, in 2017 - 960. In the ratio per 100,000 children in 2018-4305,5, in 2019 -3910,9.

So we can analyze and conclude that children aged 0-14 years are more obese than children of 15-18 years.

Goals for weight loss and its rate should be real and aimed primarily at reducing the risk of obesity-related complications. Treatment of obesity begins with the appointment of diet and exercise.

LOWER RESPIRATORY TRACT INFECTIONS, THE ROLE OF MACROLIDES

Buryachenko T., Yeshinimaeva I. - the 6th year students

Supervisors: Doc. Med. Sc., Prof. O.B. Prikhodko, Can. Med. Sc. I.V. Kostrova, E.A. Volosenkova

Infections of the lower respiratory tract (LRT) occupy a significant place in the structure of the pathology of the respiratory system due to high rates of morbidity and prevalence. Bacterial infection is a major or important etiological factor in such conditions as exacerbation of chronic bronchitis (CB) and chronic obstructive pulmonary disease (COPD), as well as pneumonia.

When prescribing empirical antibiotic therapy, a possible spectrum of pathogens and their possible sensitivity to antibiotics are taken into account. In concomitant chronic diseases and disturbance of immune status, the reception of ABP in the last 3 months: respiratory fluoroquinolone or a combination of macrolides with β- lactam, or cephalosporins of the II - III generation are recommended. The use of fluoroquinolones is the method of choice for patients who are allergic to β- lactam antibiotics.

In the treatment of infectious lesions of LRT macrolide antibiotics are important.They effectively inhibit flora spectrum including Gram-positive and Gram-negative bacteria, as well as atypical intracellular microorganisms.

HORMONES-REGULATORS OF CARBOHYDRATE METABOLISM

Serebrennikova A., Dolovova I. — the 2nd year students
Supervisors: Can. Med. Sc. E.V. Egorshina, E.A. Volosenkova

In the regulation of carbohydrate metabolism adrenaline, norepinephrine, dopamine, cortisol, somatotropin, glucagon, insulin are involved.

To regulate the level of glucose in the blood adrenaline is very significant. Norepinephrine of the adrenal glands and sympathetic nerves has a certain influence, similar to adrenaline. However, the intensity of its effect on carbohydrate metabolism is much less.

High levels of glucocorticoids reduce the sensitivity of many tissues. Thus, excess production of glucocorticoids can cause carbohydrate metabolism disorders

The main factor of increased insulin content is obesity. Also increased insulin can trigger problems with the Central nervous system

Insufficient production of the hormone is accompanied by a severe condition, which is called diabetes mellitus and is characterized by the appearance of glucose in the urine, as well as an increase in urination.

Glucagon secretion is enhanced by lowering plasma glucose levels. Glucagon deficiency. Rare cases of permanent hypoglycemia in newborns. Growth hormone has a variety of effects on carbohydrate metabolism, including: reducing glucose intake in tissues and muscles; increasing glucose production in the liver; increasing insulin production.

TYPHOON “MITAG” IN SOUTH KOREA

Ardatova A., Timets Y. — the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

On November 3, 2019 Typhoon “Mitag” brought heavy rains to South Korea. It killed 6 persons. And 6 persons more are missing. According to the Central Headquarters of Emergency Security, the majority of those killed are elderly people caught in the rubble of destroyed houses, or those caught in powerful torrential streams. Typhoon “Mitag” left the territory of the Korean Peninsula at about 6:00 of the local time, however, rains and strong winds continued throughout the day. Passenger air traffic to the south has been resumed; ships access to the sea is still limited.

DEADLY EARTHQUAKE IN CHINA

Balchyi A., Koroleva A. - the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

Late at night on June 18, 2019 in China on the territory of Changin County of Sichuan province there was a series of earthquakes with a maximum magnitude of 6.0. There are numerous destructions in the settlements of the county. There are victimes: 12 people died, 134 were injured, according to the Shanghai edition of "The Paper." It was followed by a second push of 5.3 magnitude. According to the information received, a significant number of houses have been completely and partially destroyed, roads and energy saving and communication lines have been seriously damaged.

CARPINSK-KYTLYM ROAD ACCIDENT

Galkov V., Tolstykh A. — the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

The accident occurred on July 7 on the 44 km of the Carpinsk-Kytlym road.
In total, 11 persons were injured in the explosion of a fuel truck, which in case of brake failure went off the road. Four persons were perished. They were near the fuel truck The rescue team spent 10 minutes fighting the fire with an area of 10 square meters.12 pieces of equipment, including 4 vehicles of the Ministry of Emergency Situations and 51 persons, among which there were officers and doctors, participated in the elimination of the consequences of the incident.

ANALYSIS OF MORTALITY DUE TO MYOCARDIAL INFARCTION IN THE AMUR REGION FOR 2018

Mazaeva T., Shamshina Y. — the 4-th year students
Supervisors: Prof. I.G. Menshikova, E.A. Volosenkova

Mortality due to diseases of the cardiovascular system makes up more than half of all deaths, being one of the main causes of a significant increase in mortality in Russia. In the structure of cardiovascular diseases, the leading place is occupied by coronary heart disease (CHD). The most common cause of fatal coronary artery disease is myocardial infarction (MI). MI is characterized by the development of ischemic necrosis of the myocardial site, due to the absolute or relative insufficiency of its blood supply, which can lead to complications of varying severity, including death. An analysis of the data on mortality due to myocardial infarction allows us to give not only a comparative assessment, but also subsequently be able to correctly determine the dynamics of these indicators and estimate the effectiveness of measures taken to improve the orientation of resources aimed at the prevention and treatment of myocardial infarction.

The aim of our work was to analyze the mortality rate from MI for 2018 among the population of the Amur Region. As a result of the study, it was found that during the indicated period 308 patients died of myocardial infarction, it amounted to 38.5 per 100 thousand of the population of the region. Compared with 2017, the indicator increased by 13.9% (270 patients). It should be noted that the number of patients who died outside the hospital increased from 49.6% in 2017 to 54.2% in 2018. The main cause of mortality in myocardial infarction was the development of cardiogenic shock (40.5%), pulmonary edema (39.0%) and fatal rhythm disturbances (20.5%). Among the deceased patients, men accounted for 57.6%, women - 42.4%, at working age - 19.8% of patients, 68.8% of patients were included in the clinic for IHD and hypertension, 31.2% - did not apply to the polyclinic.

Thus, men predominated among deceased patients with MI, the percentage of patients who died outside the hospital increased, while the effectiveness of dispensary observation was insufficient.

ETHICAL SOLUTIONS TO THE PROBLEM OF ABORTION

Akhromina M. — the 3rd year student
Supervisors: Doc. His. Sc., Assoc. Prof. A. I. Kovalenko, E.A. Volosenkova

To solve ethical issues related to the technology of artificial abortion, there are two main approaches-supporters and opponents of abortion, which are called conservative and liberal in accordance with the underlying ideas.

In a conservative approach, the original moral norm is the phrase from the Hippocratic Oath: "I will not give any woman an abortive pessary." In this phrase, the moral position of the medical profession about the ethical inadmissibility of the participation of a doctor in the production of artificial abortion is fixed.

According to the liberal position, abortion and contraceptives represent the practical implementation of conscious birth control by the parents themselves. Children should be born desired into the world, at the moment when their appearance is expected. It is necessary to plan the birth of children, using contraceptives and methods. But in some extreme cases, an abortion is permissible to interrupt the unwanted pregnancy. Of course, abortion is bad, harmful to health, but as an exceptional measure used in conditions of good medical care in a medical institution, it is permissible.

The main argument of opponents of abortion is the assertion that the fetus is a human being. "Since the right to life is an inalienable right of every human being, the fetus also has such a right." Supporters of abortion, without denying the facts about the vital signs of the embryo as a developing human organism, turn to the problem in which artificial abortion is a forced measure, an evil, but permissible due to the circumstances. These are cases where the development of pregnancy threatens the death of the mother, when the pregnancy occurred due to rape.

MENTAL EFFECTS OF MORPHINE

Tolstova I. — the 3rd year student
Supervisors: Prof V.A. Dorovskih, E.A. Volosenkova

Morphine is the main alkaloid of opium, the content of which in opium is on average 10 %. It is much more than the content of other alkaloids. Today more than 10 different types of poppy grow in Russia, but not all provide interest. Only Papaver somniferum is used in industry.

During the use of morphine, normal breathing may become impossible, sometimes vomiting and nausea occur.

For better dissolution and assimilation by the body, addicts take morphine in the form of salts. For medical purposes, it is used for pain relief in severe injuries. It helps to cope with shock and severe pain.

In the case of mental dependence, when the drug is lacking, the addict becomes very nervous, the consciousness is confused. Often there are psychoses, it is impossible to sleep, and in a dream nightmares torment. In real life, there are terrible hallucinations, self-perception disorder.

If you do not treat the addiction or do it yourself, you are likely to develop mental illness. Morphinists have delirium tremens, similar to alcoholic delirium tremens. When an attack occurs, the patient hears voices, sees hallucinations, the addict talks to them. Sometimes it may seem that inside a person is someone or something extraneous, from which the addict is trying to get rid of. In such a seizure, a person can inflict serious injuries to himself.

In addition to tremens, there are psychoses. They usually proceed very hard. Good mood and hyperactivity are sharply replaced by distrust, alertness, anxiety and vice versa. In the case of paranoid psychosis, there are hallucinations, delusions, persecution complex. The addict thinks that he can die, in the environment he sees hostile creatures and phenomena. Because of such outlook, the patient behaves aggressively, therefore he becomes dangerous for himself and for a society.

HEREDITARY ICHTHYOSIS

Sirenko O., Tolstova I. — the 3rd year students
Supervisors: E.E. Abramkin, E.A. Volosenkova

Ichthyosis is a skin disease accompanied by peeling of the skin and the formation of scales, ranging from mild, but disturbing to the patient, dry skin to severe skin disease that changes its structure.

Hereditary ichthyosis (the most common form) is caused by genetic mutations which are usually transmitted to the child from the parents, but are sometimes spontaneous. Hereditary ichthyosis is seen at birth, or it develops in infancy or childhood. There are many different types of hereditary ichthyosis. Some of them affect only the skin, others are only one component of hereditary diseases that affect other organs.

Depending on the form of the disease, the scales may be thin, or they may be large and thick in the form of tubercles. The formation of scales can only be observed on the palms of the hands and soles of the feet, or they can cover most of the surface of the body. Some forms of the disease are characterized by the formation of blisters, which can lead to bacterial infections.

Hereditary ichthyosis is diagnosed when the child is already born with characteristic scales on the skin, or when they are formed in the child later. To determine the cause of hereditary ichthyosis, doctors conduct examinations and consult with genetics experts (geneticists).

TROPICAMIDE, BUT NOT FOR THE EYES!

Motalygina A. — the 3rd year student
Supervisors: Can. Med. Sc., Assoc. Prof. V.I. Tikhanov, E.A. Volosenkova

Tropicamide is M-choline blocker, used in ophthalmology to study the fundus. It is used in the form of eye drops. Tropicamide is included in the list of vital and important medicines.

The composition of Tropicamide includes the MDMA substance.

Methylenedioxymethamphetamine is a separate substance, partially included into Tropicamide. The drug causes hallucinations. It should be noted that the psychotropic substance for the body does not pose a greater danger than the use of tobacco or alcohol products. The destructive effect of the drug Tropicamide strongly affects and harms the brain.

Addicts actively use Tropicamide. After learning about the presence of a psychoactive substance in the composition, they began to use the preparation as a drug. The drug causes a feeling of euphoria, thus addicts get pleasure from the narcotic action.

Initially, drug addicts used drops for their intended purpose. Addicts buried their eyes in order to hide the use of opium drugs. The medicine enlarged the lens. The man was not suspicious. Unfortunately, later the drug was used as a narcotic.

Most often, Tropicamide and alcohol are mixed. Alcoholic beverages weaken the side effects of drops, while increasing their narcotic effect.

Under the action of Tropicamide, all body systems are affected. The risk of heart attack increases. The problem with the dependence of Tropicamide is a sharp weight loss, up to dystrophy. There are cases of detachment of muscles from bones, which is not fully studied.

CONSEQUENCES OF NORTH KOREAS POACHING IN THE WATERS OF THE JAPANESE SEA IN SEPTEMBER 2019

Soboleva K., Pelmeneva D. - the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

Russian border guards detained two North Korean ships after one of them attacked a Russian patrol ship in the Sea of Japan on September 17, 2019. The situation with the invasion of North Korean poachers in Russian waters has been developing for several years.

Since what time have North Koreans been massively poaching in foreign waters? It all started a few years ago and is growing. The real owner of the ship is the captain or his relative, he builds or buys it with his own money, and then buys a false registration from one or another state organization, and with this license he goes to sea. Residents of Primorye regularly find empty North Korean schooners thrown by a storm on the coast. The Border Guard Service in the Primorsky Territory reports that about 500 North Korean ships were detained in Russian waters this year alone, and local journalists were given aerospace images that show that hundreds, if not thousands of schooners from the DPRK are illegally hunting daily near the shores of Primorye. During the ship inspection, North Korean poachers actively resisted members of the inspection team of the Border Directorate of the FSS of Russia in the Primorsky Territory, as a result of which four employees received bodily injuries of varying severity, one of which was a gunshot wound. The injured are hospitalized in medical institutions of the city of Vladivostok, their condition is assessed as stable.

CATTLE PLAGUE

Mun M., Kasumova D. — the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

Cattle plague is a contagious, often fatal disease of cattle, buffaloes, yaks and many other artiodactyls - both domesticated and wild. Cattle plague is caused by the Morbillivirus virus.

Sick animals have high fever, depression, discharge from the eyes and nose, mouth and digestive tract ulcers, accompanied by diarrhea. The animals experience dehydration and exhaustion, and they die about a week after the symptoms of the disease.

Cattle plague is an ancient disease which symptoms were known long before it received its present name. Historical evidence suggests that the plague of cattle appeared in the steppes of Central Eurasia. Throughout the nineteenth and twentieth centuries, the disease ravaged entire parts of Africa.

Since its foundation in 1945, FAO has recognized that the fight against cattle plague is necessary for better agricultural development and the protection of natural ecosystems.

GREP, or global cattle plague eradication program, was established by FAO in 1994 to close gaps in international efforts to eliminate cattle plague and ultimately to verify the absence of the disease.

Eliminating cattle plague globally requires scientific confirmation that the disease no longer occurs in vivo, although strains of the virus remain in laboratories. The world's last recorded outbreak of the disease occurred in Kenya in 2001.

A major element in the fight against cattle plague was a revolutionary vaccine developed in the 1950s by Dr. Walter Plowright in Kenya. The vaccine was used to protect cattle during outbreaks.

According to all available scientific data, the cattle plague has been completely eradicated, and its causative agent has survived only in the form of a small number of laboratory samples.

BREAKTHROUGH OF THE DAM IN BRUMADINHO

Serbicheva A. - the 2nd year student
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

On January, 25 in the suburbs of Brumadinho the Brazilian state of Minas Gerais there was a breakthrough of the dam: because of the damage of the tailing dump the flow of mud with a volume of 12 million cubic meters descended on the valley, sweeping away everything in its path. In addition to death and destruction, tragedy significantly worsened the ecological situation in the region. Toxic wastes have completely destroyed the ecosystem of the river Paraopeba, contaminated the water, killed hundreds of animals. The tragedy in Brumadinho is called the worst environmental disaster in the history of Brazil and the largest in the world related to the collapse of tailings dams.

The mudflow has spread to 10 kilometers, its power was so strong that the human body was literally torn to pieces. The height of the flow was up to 15 meters — it completely covered houses in the villages of Corrego de Feijoo and Park de Cachoeira.

ANALYSIS OF FATAL OUTCOMES IN MYOCARDIAL INFARCTION ON THE BACKGROUND OF TYPE 2 DIABETES

Fadeeva S. - the 3-rd year student
Supervisors: Can. Med. Sc. I.V. Sklyar, E.A. Volosenkova

Coronary heart disease (CHD) and its complications are the main cause of death in many countries of the world, including Russia. Among the risk factors for the occurrence and progression of coronary heart disease, diabetes mellitus (DM) is given a leading role. According

to the Framingham study, thrombotic complications of atherosclerosis are the cause of death in 80% of patients with DM.

The analysis revealed that the risk of death in myocardial infarction in patients with type 2 diabetes mellitus increases in senile and elderly people, a combination of several risk factors (primarily arterial hypertension and overweight), poor compensation for diabetes mellitus, with extensive and deep damage to the myocardium, as well as with complicated myocardial infarction. Of particular importance are the asymptomatic and pain-free forms of myocardial ischemia, it explains the late hospitalization of patients. Improvement of methods of MI diagnosis in patients with diabetes, including the hospital stage, along with modern methods of medical care, is necessary in the comprehensive development of measures aimed at reducing mortality in this category of patients.

PULMONARY ARTERY EMBOLISM AS A RESULT OF VERTEBROPLASTY

Chichilimov A. — the 3rd year student
Supervisors: Can. Med. Sc. O.N. Sivyakova, E.A. Volosenkova

In the vast majority of cases, embolism of the branches of the pulmonary artery is due to their occlusion by fragments of venous thrombi, that is thromboembolism. Embolization with drops of fat from bones during their fracture, tumor cells, parasites, amniotic fluid and air is much less common.

Of particular interest is the clinical case. A 64 year old patient was admitted to the Planned Cardiology Department of the Amur Region Clinical Hospital in 2016 with complaints of sharp, constricting pain to the left of the sternum, occurring at rest, without physical exertion, shortness of breath with minimal physical exertion, dizziness, syncope, palpitations. In May 2014, he was undergoing treatment at the Neurosurgery Department for active hemangioma of the L1, L3 vertebral bodies where transdermal puncture vertebroplasty augmented with bone cement was performed. The patient was discharged from the hospital in satisfactory condition. Since that time shortness of breath with minimal physical exertion, pain to the left of the sternum of a throbbing character not related to the physical activity, episodes of syncope, frequent presyncopal conditions, severe weakness have appeared. The patient was discharged in satisfactory condition under the supervision of a cardiologist at the place of residence. Later the worsening of his condition occurred again. In August 2015 he applied to a paid center for a consultation, where an X-ray examination was carried out which revealed an intensive shadow of a linear shape up to 5 cm long, 2-5 mm thick in the projection of the left root of the lung. In November 2015, the patient was admitted to the Department of Urgent Cardiology, CT angiography of the chest organs was performed to exclude pulmonary embolism. It revealed CT signs of emphysema, diffuse pneumosclerosis. Data for pulmonary embolism were not detected. CT signs of a foreign body at the level of the left pulmonary artery (possibly as a complication after puncture vertebroplasty of the L1, L3 vertebral bodies).

After the treatment, the patient noted an improvement and was discharged under the supervision of a cardiologist and pulmonologist at the place of residence. Within a month after discharge, he again noted a deterioration in his condition and on February 3rd. 2016 he was hospitalized in the planned cardiology department of the Amur Region Clinical Hospital for further examination and treatment correction.

The following diagnosis was made: ischemic heart disease, PIX (2012), rapid ventricular extrasystole IVB gr. Paroxysmal supraventricular tachycardia, arterial hypertension of the 3rd

degree, CHF (Chronic Heart Failure) II A. FC (Functional Class - II); chronic partial cement embolism of the left pulmonary artery due to puncture vertebroplasty (2014)

The associated diagnosis included: COPD, a mixed type, mild course, unstable remission, NAM I. The patient was discharged under the supervision of a cardiologist and pulmonologist at the place of residence in a satisfactory condition. After analyzing the medical history, a complication of puncture vertebroplasty (performed in 2014) with bone cement was revealed in the form of a partial embolism of the left pulmonary artery. This complication is rare for this kind of intervention, but possible. According to foreign studies, in 0.9% of patients asymptomatic cement embolism of small branches of the pulmonary artery due to vertebroplasty was revealed with CT. Asymptomatic embolism of small branches of the pulmonary artery is revealed radiologically and does not require special treatment. The presence of an embolism of the medium and large branches of the pulmonary artery requires an urgent surgical intervention - removal of polymethyl methacrylate from the vascular bed.

PERIPHERAL LUNG CANCER

Gribova E. - the 3-rd year student
Supervisors: E. E. Abramkin, E.A. Volosenkova

Peripheral lung cancer - a tumor of a malignant nature, occurs in the mucous membrane of the peripheral department of the segmentary bronchus, its smaller branches and bronchioles, rarely — from the alveolar epithelium. Cancer for a long time grows expansively in the form of a node, sometimes reaching large sizes (diameter is up to 5-7 cm). It has a structure of glandular, less often - squamous cell or undifferentiated.

For peripheral lung cancer, which develops in the pulmonary tissue, the onset of the disease is almost asymptomatic. It does not manifest clinically until it is detected by a random examination. Only with the increase in size, joining inflammation or germination of the tumor into bronchi or pleura there is a bright symptom of severe pain, cough with fever. Sometimes the earliest manifestations of small peripheral cancer are numerous hematogenic metastases.
In the advanced stage due to the spread of the tumor in the cavity of the pleura cancerous pleurisy with progressive accumulation of blood sweat develops.

Timely diagnosis of lung cancer at the stage where radical cure is possible presents certain difficulties due to the paucity of clinical manifestations and objective data. For early peripheral lung cancer there are no specific symptoms, in most patients it is generally asymptomatic. Deployed clinical symptoms often indicate a common process, which subsequently entails long-term diagnosis in cancer patients.

Peripheral cancer is the most common form of cancer, which is the number two cause of death in the world, it is found in 50-55% of lung cancer cases. In recent decades, there has been a significant increase in lung cancer. Thus, in 10-20 years the number of lung cancer patients has increased by 3 to 4 times. The highest incidence is manifested at the age of active activity: 45 - 65 years, with an average age of about 53-57 years. At the same time, the latent period of the diagnosis of lung cancer is 2-4 years. The rate of doubling the size of lung cancer is 4 months.

BIOCHEMICAL MECHANISMS OF THE PATHOLOGICAL PROCESSES DEVELOPMENT

Pendyur A. — the 2nd year student
Supervisors: L.G. Tertychnaya, E.A. Volosenkova

Pathological biochemistry proceeds from the position that all diseases have a biochemical basis and are a manifestation of disorders:

- in the structure of molecules;
- in the course of chemical reactions and processes.

The main provisions that allow us to consider the disease from a biochemical standpoint include the following:

1. Many diseases are genetically determined.

2. All classes of biomolecules found in a cell can change their structure, function, or quantity in a particular disease; Genetic disorders that lead to changes in non-enzymatic proteins often have common secondary effects. An example is sickle cell anemia. Hemoglobinopathies, one of which is sickle cell anemia, are characterized by a disturbance of the structure of the globin molecule.

3. Diseases can be caused by deficiency or excess of certain molecules (vitamins, hormones, enzymes). If the final product acts on the enzymes involved in the initial reactions through negative feedback, the result of the deficiency of the final product may be an excess of intermediates and their catabolism products, some of which may be toxic in high concentrations. An example of a disease with such a mechanism of development is Lesh-Nihan syndrome.

APPLICATION OF PROBIOTICS IN CLINICAL PRACTICE

Pashchenko V., Lukashova L. — the 6th year students
Supervisors: Can. Med. Sc. Yu. V. Suslova, E.A. Volosenkova

Probiotics are living microorganisms that, when administered in adequate amounts, have a beneficial effect on the health of a macroorganism by changing the properties of normal microflora. Probiotic preparations, as a rule, are lyophilically dried living bacteria that come to life in the intestines when ingested and colonize it, inhibiting the vital activity of the pathogenic flora.

There are four generations of probiotics. Monocomponent preparations (Colibacterin, Bifidumbacterin, Lactobacterin) containing one bacterial strain are referred to the I generation. The II generation drugs (Bactisubtil, Biosporin, Sporobacterin, Bactisporin) are based on non-specific microorganisms for a person and are selfeliminating antagonists. They should be used in mandatory combination with bifidobacteria and lactobacilli. Preparations of the III generation include multicomponent probiotics containing several symbiotic strains of bacteria of the same species (Acylact, Acipol) or of different species (Linex, Bifiform), with a mutually reinforcing effect. The fourth generation includes preparations of bifidobiotic probiotics immobilized on a sorbent (Bifidumbacterin forte, Probifor, Florin forte), which contain bifidobacteria sorbed on particles of crushed activated carbon.

Probiotics interacting with Toll-like receptors activate the nuclear factor, which induces genes that determine the antimicrobial and pro-inflammatory response, in particular the production of pro-inflammatory cytokines. Probiotics take part in the formation of free amino

acids, organic acids, oligosaccharides, fatty acids, bioactive peptides, help lower cholesterol, neutralize food carcinogens, and affect the synthesis of vitamins.

PRIMARY CILIARY DYSKINESIA (PCD)

Palachik T., Sechkareva M. — the 6-th year students
Supervisors: Can. Med. Sc. I. V. Kostrova, Doc. Med. Sc. O.B. Prihodko, E.A. Volosenkova

Primary ciliary dyskinesia (PCD) is a genetically heterogeneous disorder of motile cilia. Most of the disease-causing mutations identified today involve the heavy (DNAH5) or intermediate (DNAI1) chain dynein genes in ciliary outer dynein shoulders, although a few mutations have been noted in other genes.

The first cases, reported in the early 1900's, and characterized by a triad of symptoms that included chronic sinusitis, bronchiectasis and situs inversus, became known as Kartagener syndrome. Subsequently, patients with Kartagener syndrome, as well as other patients with chronic sinusitis and bronchiectasis, were noted to have “immotile” cilia and defects in the ultrastructural organization of cilia.

The clinical features of PCD manifest early in life. Most PCD patients (70-80%) in the neonatal period have respiratory distress, which suggests that motile cilia are critical for effective clearance of the fetal lung fluid. In a retrospective review, investigators have found the mean age of PCD diagnosis was more than 4 years of age despite these early pulmonary manifestations. Persistent rhinitis and chronic cough are present since early infancy. Chronic cough is consistently reported in the majority of subjects (84-100%), and typically characterized as wet and productive.

The “gold-standard” diagnostic test for PCD has been electron microscopic ultrastructural analysis of respiratory cilia obtained by nasal scrape or biopsy. Recently, nasal nitric oxide (NO) measurement has been used as a screening test for PCD, because nasal NO is extremely low (10-20% of normal) in PCD patients. As an adjunct test, nasal NO measurement can not identify individuals with probable PCD (even if ciliary ultrastructure appears normal) to target for genetic testing.

ENZYMES FOR DIAGNOSIS OF LIVER DISEASES

Kasumova D., Mun M. — the 2nd year students
Supervisors: Assoc. Prof. E.V. Egorshina, E.A. Volosenkova

Enzymes can be located in the membrane, cytoplasm or mitochondria of hepatocytes. Each enzyme has its own strict place. Easily damaged enzymes are located in the membrane or cytoplasm of hepatocytes. This group includes lactate dehydrogenase, aminotransferase and alkaline phosphatase. Their activity increases in the clinically asymptomatic phase of the disease. With chronic liver damage, the activity of mitochondrial enzymes (mitochondria - the organelle of the cell), which include mitochondrial AST increases. With cholestasis, the activity of bile enzymes, alkaline phosphatase, increases.

Aspartate aminotransferase (AcAt) is an enzyme involved in the metabolism of amino acids. Alkaline phosphatase (alkaline phosphatase) participates in the reactions of cleavage of the residue of phosphoric acid from its organic compounds. It is contained mainly in the liver and

bones. Lactate dehydrogenase (LDH) is required for glycolysis reactions (energy release from glucose breakdown). There are five different forms (isoenzymes) of LDH, which differ in molecular structure and location in the body. The isoenzyme LDH-5 is most characteristic for the liver, and LDH-4 is less active. In diseases accompanied by tissue damage and cell destruction, LDH activity in the blood increases. In this regard, it is an important marker of tissue destruction. Glutamate dehydrogenase (GDH) is a participant in the exchange of amino acids. Deviations from the norm are observed with severe damage to the liver and biliary tract, acute intoxication. Sorbitol dehydrogenase (LDH) is a specific enzyme, the detection of which in the blood indicates acute liver damage (hepatitis of various etiologies, cirrhosis). In conjunction with the indicators of fructose monophosphate aldolase (FMFA) it can be normally detected in the blood in trace amounts. An increase in FMFA is characteristic for acute hepatitis and occupational intoxications of workers in hazardous industries.

AWARENESS OF SCHOOLCHILDREN LIVING IN THE AMUR REGION ABOUT THE PREVENTION OF IODINE DEFICIENCY CONDITIONS

Borodina V., Randina M, Krasnoselskaya A. — the 4th year students
Supervisors: O.V. Zhuravleva, E.A. Volosenkova

Topicality: Iodine is a microelement which main physiological function is to participate in the synthesis of thyroid hormones. They, in turn, regulate the processes of growth, development, differentiation, metabolism in all organs and tissues of the human body. The Amur region belongs to the endemic zone for iodine deficiency. In the city of Blagoveshchensk there is a lack of iodine of average degree.

Purpose: to study the level of schoolchildren awarenes about the importance of iodine in the body, and methods of prevention of iodine deficiency conditions.

Methods of research: a survey of pupils of 8 classes, within the framework of the project "Health Fair".

Results: 112 persons aged 14-15 years were surveyed. During the study we divided the children into 2 groups: the 1 group of boys — 55 persons and 2 group of girls - 57 persons. What is the daily dose of iodine needed by the body of a teenager? Children answered in the 1 group: 13% (do not know), 200mg-3%, 100mg-44%, 50mg-20%, its not required -13%. In the 2nd group respectively - 18%, 12%, 42%, 28%. All the girls are completely sure that iodine is necessary for the body. When analyzing the questionnaires, it was revealed that in group 1, 25 % of students know that they live on iodine-deficiency territory, while in group 2, this figure was 53 %. In group 1, 53 % of pupils do not go to the sea, 47% go to the sea at least 1 time in 2 years. In group 2, 56% do not go to the sea. But both in the group of boys and in the group of girls, regular prevention of iodine deficiency conditions is not carried out. Iodized salt is regularly used at home in the 1st group by only 16% of children, in the 2nd - by 25%. Although seafood is used less than 1 time per month in the 1st group(37%), the rest - more often. In group 2, this figure was 26%.

Conclusions: According to the results of the survey, it was revealed that in group 2, schoolchildren know more about the prevention of iodine deficiency than in the group of boys.

Generally, most children do not know what iodine is, its role in the body, and what the prevention of iodine deficiency is. Therefore, it is necessary to carry out more often activities aimed at informing children about the prevention of iodine deficiency, especially in iodine-deficiency regions.

PECULIARITIES OF THE COURSE OF PSORIATIC ARTHRITIS IN WOMEN AND TREATMENT WITH GENETICALLY ENGINEERED BIOLOGICAL DRUGS

Pisarevsky A. — the 6th year student
Supervisors: Can. Med. Sc., Assoc. Prof. M. V. Pogrebnaya, E.A. Volosenkova

Psoriatic arthritis is an inflammatory disease of the joints and spine associated with psoriasis. It is characterized by a chronic progressive course, affection of the musculoskeletal system with the development of erosive arthritis, ankylosing spondylitis, bone resorption, multiple enteritis, general and visceral manifestations. An example of the course of psoriatic arthritis in women is a clinical case: Patient B., 38 years old was transferred from ARSVD to the ARCH rheumatology department to solve the issue of genetically engineered biological therapy (GEBT). She has complained of aching pain in the right knee, right shoulder, joint swelling, hyperthermia up to 37.2 °C; psoriatic rashes throughout the body and on the scalp. She has had psoriasis since childhood (since 1989) and was treated by ARSVD. Joint pains appeared 19 years later, in 2011, there was the last relapse. She took methotrexate for a long time, without any effect. When examined - generalized skin lesion, 80% of the lesion. According to laboratory methods of study - change in acute phase parameters: SLE - 18; fibrinogen - 6.3; SRS - 14. Rheumatoid factor - 140.7. X-ray of hands and foot revealed signs of psoriatic arthropathy of the II-III degree. Diagnosis: Psoriatic arthritis with lesions of the joints of the upper and lower limbs, high activity, rheumatoid form, RII-III st. FC II. Treatment with glucocorticoids and GIBTs - inhibitors FNO-α (infliximab) was prescribed. Thus, the peculiarity of psoriatic arthritis was asymmetrical lesion of the interphalangeal joints of the hands, feet, right knee joint; orosacral joint with the development of erosive-destructive changes; long duration of psoriasis with the development of psoriatic arthritis, resistant to therapy. If cytostatic therapy is ineffective, genetically engineered biological therapy is shown to patients.

CASE OF THROMBOANGIITIS OBLITERANS DEVELOPMENT IN WOMEN

Valevskaya E., Teplyashin D. - the 6th year students
Supervisors: Can. Med. Sc., Assoc. Prof. M. V. Pogrebnaya, E.A. Volosenkova

Bürger's disease is a systemic immunopathological inflammatory disease of small and medium-sized limb vessels with arterial obliteration and migrating thrombophlebitis. The etiology is unknown and is more common in men with tobacco use in their history. Clinical case of Bürger's disease is presented: Patient F., 47 years old, was transferred from the vascular surgery department of ARCH to the rheumatology department to exclude systemic vasculitis. Since 2018, she has been ill, noting cold limbs, pain in her right leg, left hand, numbness of her fingers. Amputation of the middle third of the shin, thrombectomy from the left shoulder artery and arteriography of the upper left limb were performed. She was operated twice -

thrombectomy from the left shoulder and ulnar arteries. Rethrombosis was on the first day. Patient smoked 20 cigarettes a day for 30 years. When examined - cyanosis and cooling of the skin of the left hand without swelling. Dry black necrosis of distal phalanges of the 2-5 fingers of the left hand. At laboratory research the sharp-phase indexes are raised: DRR - 16, fibrinogen - 7,4, SEE - 33. The immunopathological nature of the disease is indicated by the increase of rheumatoid factor level - 120.1. Changes in blood lipid spectrum: Cholesterol - 7.6; triglycerides - 2.47; LDL - 6.43; HDL - 0.86; atherogenicity coefficient - 8, which indicates a high risk of atherosclerosis. The arteriogram of the upper left limb shows the occlusion of the brachial, ulnar and radial arteries. Treatment with cytostatics and glucocorticoids has begun. The peculiarities of the case are immunocomplex and atherosclerotic vascular lesions, rapid progression of the disease with peripheral arterial lesions. Bürger's disease is difficult to detect because of the similarity of the clinical picture with other peripheral arterial diseases. Careful examination of patients is necessary to prevent early disability.

ANALYSIS OF CHANGES IN THE THYROID GLAND IN PRESCHOOL CHILDREN

Dzyuban M., Sergeeva A. — the 5th year students
Supervisors: O.V. Zhuravleva, E.A. Volosenkova

Thyroid diseases occupy a dominate position among the endocrinopathies. We analyzed 50 case histories of children who were treated in the pediatric department with cardiovascular pathologies, and namely myocardial dystrophy of mixed genesis with rhythm disturbance, by the type of bradycardia. The average age of children made up 7.2 ± 1.3 years. Among them 23 girls were examined — group 1 and 27 boys — group 2. It was found, that the average weight in girls is 30 ± 1.5 kg. with height of 132 ± 2 cm, and in boys - 29 ± 1.7 kg. with height of 132 ± 1.3 cm. It was found that the thyroid function disorder, namely hypothyroidism, in boys is 4.5 times more common than in girls. While in girls, euthyroidism prevails - 87%, among boys - 59%, respectively. When analyzing ultrasound of the thyroid gland in girls, the normal size and its development is 61%, endemic goiter was observed in 39%, while in boys an increase in the size of the thyroid gland prevails -59%, and the norm was -41%. When analyzing the adaptive abilities of the leukocyte formula (Harkavys method), it was found, that in group 1, an increased reactivation was observed in 21%, a workout reaction in 21.7%, quiet activation - 26%, reactivation - 4%, stress state - 17.6 %. In group 2, these figures were 26%, 22.1%, 29.6%, 11%, 11%, respectively.

Thus, we found out, that, there is a high percentage of thyroid pathology in both, boys and girls, in children with CVD pathology, in early preschool age. Also, the disturbance of adaptive capacity, according to the leukocyte formula, says about the state of pre-disease which is equally high in both groups.

HISTORY OF DOMESTIC HEALTH DEVELOPMENT

Dzyuban M., Sergeyeva A. — the 5th year students
Supervisors: Can. Med. Sc. E. A Sundukova, E. A. Volosenkova

The history of domestic health care development begins with ancient Russia. Medical and social care was provided in churches and monasteries. The first hospitals were established in the 11th century in Pereyaslavl and Kiev. In 1620 the Moscow State established the Pharmacy Order, the purpose of which was to provide medical assistance to the royal court, later it turned into a large state institution. Already by the 18th century there were many transformations in

medicine, the initiator of some of them was Peter I. Special attention was paid to the health of soldiers and sailors, the execution of decrees on observance of hygiene in troops and on ships was mandatory. Military hospitals were established. In Russia, in 1803, decentralization of the management of health care began, outpatient care began to develop, and outpatient clinics began to work at hospitals. Already in the 60s of the 19th century in the world a system of medical care for the rural population - district medicine was organized for the first time. After the February 1917 revolution, there was an attempt to improve the workers insurance system. The Act of June17, 1917 introduced some innovations and, in the same way, provided the extension of insurance to all industries and to the wider working population. In December 1918, the entire pharmacy network was nationalized, a pharmaceutical department was organized, as well as the priority of preventive medicine. There was a complex of measures to combat social diseases - tuberculosis, sexually transmitted diseases. Further, in 1930, the reform of medical education was taking place, which contributed to the improvement of the planning of admission and graduation of doctors, the increase in the number of medical institutions, and therefore the number of doctors. Specialized training began, and medical institutes were organizing medical, sanitary and hygienic and pediatric faculties. In the 1960s, attention was paid to the development of specialized services, the provision of emergency medical care to the population, dental and X-ray radiological care. New forms of medical care are emerging in the country - a doctor of general practice, day hospitals, centres of outpatient surgery and so on. New technologies are being introduced in hospitals, new developments — in medical science.

REQUIREMENTS FOR THE PLACEMENT OF MEDICAL FACILITIES AND ORGANIZATIONS IN THE COUNTRYSIDE

Mengileva K., Pesternikova A. - the 5th year students
Supervisors: Can. Med. Sc. E. A Sundukova, E. A. Volosenkova

In rural settlements with more than 2,000 inhabitants primary health care should be provided by outpatient clinics. If the number of inhabitants exceeds 1,000, but it doesn't reach 2,000 persons in the village may be organized a paramedic-obstetrician's office/health centre (if the distance to the nearest medical organization does not exceed 6 km) or a general medical practice centre / medical outpatient clinic (if the distance from the paramedic-obstetrician's office to the nearest medical organization exceeds 6 km).

In settlements with the number of inhabitants from 301 to 1 thousand persons by paramedic-obstetrician's offices or paramedic health centres are set up, regardless of the distance to the nearest medical organization in the absence of other medical organizations.

In rural settlements with a population of 100-300 persons, primary medical care is provided through midwifery and paramedic centres.

It is important to note that every person living in rural areas is attached to a specific doctor or paramedic for primary health care.

If the number of residents is less than 100, primary medical care is organized through the field service, which in recent years has been seriously strengthened and improved: in 2014, the number of mobile diagnostic complexes increased to 2900 units, and mobile teams of specialists - more than 8,000.

The organization of the first aid in the village with the help of household houses includes provision with means of communication, communication with the territorial center of disaster medicine, access to the information and communication network "Internet", as well as the formation of a medicine chest, kits and kits for the first aid, informing the population.

THE PHENOMENON OF SIAMESE TWINS - ASPECTS OF STUDY IN MEDICINE

Kiselev M. — the 1st year student
Supervisors: Prof. E.N. Gordienko, E.A. Volosenkova

Siamese twins are a variant of blastopathy in which monozygotic twins grow together in a certain part of the body. The disease creates inconvenience and a threat to the lives of patients. Studying this pathology by the type of pag can help to conduct preventive measures that prevent their appearance, and better understand the early stages of human ontogenesis.

The term appeared and spread in the 19th century during the performances of Chang and Eng Bunkers from Siam (present - Thailand). In the 30s of the 19th century, the teratologist Isidore Geoffroy de Saint-Iller classified Siamese twins. It has not changed in almost this time. Pags are classified primarily as symmetrical and asymmetric (parasitic). Symmetric ones are divided according to the area of intergrowth, using Greek etymology.

Among the factors, the effect of mitotic inhibitors, stress during pregnancy, psychotropic substances, a sharp change in temperature or pressure, failure of the genes responsible for asymmetry and cell division in the early stages of ontogenesis are distinguished. There are two main hypotheses:

A) mergers - embryos dispersed too early and were connected by stem cells to homologous sites during organogenesis;

B) divisions - embryos dispersed too late and developed in a common amniotic sac.

Pathology is treated with surgical separation. The complexity of the operation depends on the degree of fusion. Laser separation is also possible in the womb, but one of the embryos dies. Diagnosis can be done using ultrasound, but this does not always work.

NOBEL PRIZE IN CHEMISTRY, 2019

Osipova E. — the 2nd year student
Supervisors: Doc. Med. Sc., Prof. E. A. Borodin, E.A. Volosenkova

This year (2019) the Alfred Nobel Award was presented to scientists from America and Japan - D. Goodenaf, S. Whittingham and A. Esino. They invented and developed renewable power sources - lithium-ion batteries. Whittingham laid the foundations for this technology. Whittingham studied superconducting materials, including tantalum disulfide. Goodenaf realized that it was possible to improve the cathode of the device by replacing metal sulfide with metal oxide. Esino used lithium-cobalt oxide (LiCoO2) as the cathode material. Today, lithium-ion batteries have no competitive alternatives.

INFLUENCE OF WEARING AN AUDIO HEADSET ON ACCIDENTS IN THE RUSSIAN FEDERATION

Osipova E., Sidorenko K. — the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

Experts analyzed the reporting of the national electronic system of supervision for traumatism in the Russian Federation for the period between 2004 and 2011. On the whole 116 cases were considered, in 70% of which the victims died. The absolute majority of incidents occurred in urban areas. The most likely causes are distraction and sensory deprivation caused by the use of electronic devices. One per four teenagers can lose their hearing much earlier than as a result of natural aging. Those who listen to the MP3 player at high volume for several hours, already today in their 30-40 years can detect marked deterioration of hearing.

HISTOLOGICAL STOMATITIS PATTERN

Osipova E. — the 2nd year student
Supervisors: N. P. Krasavina, E.A. Volosenkova

The treatment of diseases of the oral mucosa, in particular stomatitis of various etiologies, continues to be one of the most complex and important sections of modern dentistry. According to Rybakov A.I., in 1978 the prevalence of stomatitis among the population of our country was 5% of all inflammatory diseases of the oral mucosa, and currently the share of stomatitis occupies about 53%. Depending on the damaging factor, there are about 10 species of stomatitis that have both common and specific symptoms. Staphylococcus aureus is the main representative of the group, causing stomatitis of bacterial nature.

THE BIOLOGICAL ROLE OF HOMOCYSTEINE

Pelmeneva D., Soboleva K. — the 2nd year students
Supervisors: Can Med. Sc., Assoc. Prof. E.V. Egorshina, E.A. Volosenkova

Homocysteine (HSCH2CH2CH (NH2) CO2H) is a sulfur-containing amino acid that is synthesized from methionine during a multi-stage metabolism. Homocysteine can be converted back to methionine using B vitamins. Homocysteine also acts as an allosteric antagonist of dopamine D_2 receptors. Homocysteine levels are usually higher in men than in women and are constantly increasing with age. The average homocysteine levels in adults are in the range of 10-12 μmol / L, and values of 20 μmol / L and higher are observed in older persons or with vitamin B_{12} deficiency. Values of homocysteine above 15 μmol / L indicate hyperhomocysteinemia, which is a significant risk for the development of thrombosis, neuropsychiatric diseases, bone fractures, and is also considered a marker of an increased risk of cardiovascular disease and kidney disease. Approximately 70% of homocysteine in the kidney is converted to methionine, so kidney disease and a decrease in their effective functioning contribute to an increase in homocysteine levels and an increased risk of developing cardiovascular pathologies. Homocysteine acts on the tissues of the blood vessels so that they become loose, local inflammation occurs due to the action of immune cells, and cholesterol and calcium are deposited on this surface, which contributes to the formation of plaques. An increase in homocysteine level by 5 μmol / L leads to an increase in the risk of vascular damage to atherosclerotic plaques in women by 80%, in men - by 60%. Chemical groups in homocysteine can affect the overall electrical potential of proteins and cells, which increases oxidative stress in these cells. It can lead to an increase in cellular toxicity and the loss of proteins of their normal functionality, which is associated with the development of neurodegenerative diseases.

TOXICOLOGY OF ETHANOL

Kudinova P. — the 2nd year student
Supervisors: Doc. Med. Sc., Prof. E. A. Borodin, E.A. Volosenkova

Ethanol is a substance that combines the properties of a natural metabolite of the human body, a toxic xenobiotic, a medicine and an alimentary factor that can significantly change the effectiveness of drug therapy.

Poisoning with ethyl alcohol for a long period occupy a leading place among household poisonings by the absolute number of deaths.

The rate of intoxication and its intensity are different both in different nations and in men and women. This is due to the fact that the isoenzyme spectrum of the enzyme alcohol dehydrogenase (ADH) is genetically determined.For a certain person, the approximate concentration of ethanol in the blood can be calculated by E. Widmark's formula.

Alcohol has a toxic effect on a number of human organs. Alcohol-related mortality is 6.3 % for men and 1.1 % for women, according to WHO. The international Agency for cancer research lists ethanol in alcoholic beverages as a proven carcinogen capable of causing cancer in a person. Alcohol increases the risk of breast cancer, gastrointestinal cancer and some other cancers. Alcoholic beverages worsen the absorption of nutrients from food, impair many links of the volume of substances in the body: proteins, carbohydrates, fats, mineral salts.

The lethal concentration of alcohol in the blood is 5-8 g / l, the lethal single dose is 4-12 g/kg (about 300 ml of 96 % ethanol).

In the late 60s and early 70s of the last century, attention was drawn to the specific deformities and developmental defects of children born in women suffering from alcoholism. This type of disorder is called "fetal alcohol syndrome".

PCR-EXPEDIENCY OF WIDE INTRODUCTION OF THE METHOD IN HUMAN GENETICS

Melkonyan M. — the 1st year student
Supervisors: Prof. E.N. Gordienko, E.A. Volosenkova

The growth of hereditary diseases, genetic diseases, including the territory of the Russian Federation, urgently requires the introduction of modern research methods, including PCR, into prenatal diagnosis. The aim of our study was to get acquainted with the experimental method of molecular biology-polymerase chain reaction (PCR), the history of its discovery, the principle of the method. Its effectiveness is not in doubt among geneticists and clinicians, and therefore is widely used in Diagnostic centers, including Blagoveshchensk, Svobodny. PCR is based on the possibility of a significant increase in small concentrations of certain nucleic acid fragments (DNA) in the biological material (sample). The specificity of the diagnostic application of PCR-a method of molecular diagnosis, which has become the "gold standard" for a number of infections - has been time-tested and thoroughly tested clinically.

We have to note that the PCR method, which allows to determine the presence of the pathogen, even if only a few DNA molecules of the pathogen are present in the sample, is used primarily for the diagnosis of infections and invasions. PCR allows to diagnose the presence of

long-growing pathogens without resorting to time-consuming microbiological methods, which is especially important in gynecology and urology in the diagnosis of sexually transmitted infections (STIs). However, unfortunately, we have to state that much less often this reaction is used for its original purpose-the diagnosis of hereditary pathology!

If it is necessary to diagnose viral infections, such as hepatitis, HIV, etc., with a high sensitivity of the method, significantly exceeding that in immunochomic and microbiological methods, we hope that the literacy of future doctors of the XXI century will direct their interests to the introduction for patients with the purpose of genodiagnostics of PCR.

EPIDEMIOLOGY OF CLONORCHIASIS

Sikorskiy M. - the 1st year student
Supervisors: Prof. E.N. Gordienko, E.A. Volosenkova

Clonorchiasis is endemic in the Far East, including South Korea, China, northern Vietnam, and far-eastern Russia. Moreover, emigrants or travellers from endemic areas will increase the risk of disease transmission to other countries. **China** has the largest population of infected people, which is estimated at 13 million. In the 2001—2004 survey, an epidemiological investigation of clonorchiasis was conducted in 27 endemic provinces/autonomous regions/municipalities (P/A/M). C. sinensis infection was found in 19 P/A/M, and the average infection rate among the 27 P/A/M was as high as 2.4 %. It is estimated that 12.49 million individuals are infected with C. sinensis in China; the infection rate in Guangdong province is the highest (16.4 %), followed by those in Guangxi autonomous region (9.8 %) and Heilongjiang province (4.7 %). Almost 31 types of freshwater fish were reported to be infected with metacercariae of C. sinensis in 14 P/A/M of China. Moreover, the rate of infection with C. auratus was relatively high in Heilongjiang. Rabbits were infected with C. sinensis in some cases in Heilongjiang province. In **South Korea**, the prevalence of egg-positive individuals was 4.6 % in 1971, 1.4 % in 1997 and 2.9 % in 2004. It is estimated that 1.4 million people are currently infected. Clonorchiasis has been recorded in almost all northern provinces of **Vietnam** at prevalence values ranging from 0.2 to 37.5 %. In **Russia**, C. sinensis is mainly distributed in the southern Far East, especially near the Amur River basin, and approximately 3 000 people are estimated to be infected. Most cases of clonorchiasis occur in low- or middleincome countries of Asia, causing severe disease burdens and serious medical and economic problems. Almost 5 591 people die from the infection each year. Clonorchiasis causes cholecystitis, gallstones, liver cirrhosis, and liver cancer. In Guangdong province (China) the calculated economic burden of clonorchiasis made up RMB 1.3 billion (more than $US 200 million).

INTERLEUKIN 6

Sikorskiy M. - the 1st year student
Supervisors: L.Y. Etmanova, E.A. Volosenkova

Interleukin 6 (IL-6) is an interleukin that acts as both a pro-inflammatory cytokine and an anti-inflammatory myokine. In humans, it is encoded by the IL6 gene. In addition, osteoblasts secrete IL-6 to stimulate osteoclast formation. Smooth muscle cells in the tunica media of many

blood vessels also produce IL-6 as a pro-inflammatory cytokine. IL-6's role as an anti-inflammatory myokine is mediated through its inhibitory effects on TNF-alpha and IL-1, and activation of IL-1 and IL-10.

IL-6 is an important mediator of fever and the acute phase response. It is capable of crossing the blood-brain barrier and initiating synthesis of PGE2 in the hypothalamus, thereby changing the body's temperature setpoint. In muscle and fatty tissue, IL-6 stimulates energy mobilization that leads to increased body temperature. IL-6 can be secreted by macrophages in response to specific microbial molecules, referred to as pathogen-associated molecular patterns (PAMPs). These PAMPs bind to an important group of detection molecules of the innate immune system, called pattern recognition receptors (PRRs), including Toll-like receptors (TLRs). They are present on the cell surface and intracellular compartments and induce intracellular signaling cascades that give rise to inflammatory cytokine production. IL-6 is found in many supplemental cloning media such as briclone. Inhibitors of IL-6 (including estrogen) are used to treat postmenopausal osteoporosis. IL-6 is also produced by adipocytes and is thought to be a reason why obese individuals have higher endogeneous levels of CRP. Intranasally administered IL-6 has been shown to improve sleep-associated consolidation of emotional memories.IL-6 is responsible for stimulating acute phase protein synthesis, as well as the production of neutrophils in the bone marrow. It supports the growth of B cells and is antagonistic to regulatory T cells. When psychologically stressed, the human body produces stress hormones like cortisol, which are able to trigger interleukin-6 release into the circulation.

DIAGNOSTIC VALUE OF BIOCHEMICAL RESEARCHES IN MYOCARDIAL INFARCTION

Shatrov D. — the 2nd year student
Supervisors: Prof. E.A. Borodin, E.A. Volosenkova

In case of myocardial infarction, as a result of cell necrosis of the heart muscle, the enzymes and proteins, contained in them, enter the bloodstream. By their presence, time of occurrence and concentration in blood plasma, it is possible to assess the damage, caused to the heart muscle and timely choose the right tactics of treatment.

An ideal biochemical marker should have the highest specificity and sensitivity for myocardial necrosis, and reach a diagnostically significant level in the blood. Currently, a marker that fully meets all these requirements does not exist, therefore, for the diagnosis of myocardial infarction, it is recommended to use two markers in parallel - “early” and “late”. The content of the “early” marker in case of myocardial infarction is diagnostically significantly increased in the blood during the first hours of the disease, and the “late” one reaches a diagnostically significant level only after 6—9 hours, but has high specificity for myocardial necrosis.

Early factors of myocardial necrosis. Myoglobin - appears in the blood even before the formation of the focus of necrosis, at the stage of severe ischemic damage to the heart muscle. An increase in myoglobin level of 10 times or more - indicates necrosis of muscle cells. MV-fraction of creatinine phosphokinase: For the diagnosis of myocardial infarction on the first day

from the onset of a heart attack it is determined 2-3 times every 8 hours. Three negative results make it possible to exclude myocardial infarction, and an increase in the concentration of this enzyme in the blood with a high degree of probability indicates myocardial infarction. CFABP (Cardiac Fatty Acid Binding Protein) - CFABP is generally freely located in the cell cytoplasm, in the event of damage to the cell membrane of the cardiomyocyte, it quickly enters the bloodstream. In the blood of healthy people, a small amount of SBSLC circulates.

Late markers of myocardial necrosis. Troponin - enters the peripheral bloodstream from the necrosis zone in the first hours of myocardial damage. Troponins T and I are present only in myocardial cells, therefore, an increase in their concentration in the blood is a reliable sign of myocardial infarction and an indicator of its prevalence. Lactate dehydrogenase - The cardiac muscle contains mainly the isoenzyme LDG-1. In myocardial infarction, LDG concentration begins to exceed the normal level 14—48 hours after the onset of symptoms, reaches its maximum value on the 3rd — 6th day of the disease, and returns to normal on the 7—14th day of the illness.

PTOMAINE

Kuzko A., Kuzmina A. — the 2nd year students
Supervisors: Prof. E.A. Borodin, E.A. Volosenkova

Ptomaine (from the Greek Ptoma — cadaver) or corpse poisons is an outdated term used to refer to biogenic amines resulting from putrefactive processes-partial decomposition of protein and decarboxylation of its amino acids.

The main ptomaine: putrescine and cadaverine and spermedin, the spermine and neyrin. These substances are low-toxic, but they can cause severe poisoning if they enter the bloodstream of a living person.

Pathologists know that penetration of cadaverous material into open wounds can lead to inflammation and sepsis. This is due to a certain kind of bacteria actively developing after death in biological material.

Putrefactive processes are very dangerous because the toxins secreted by microorganisms greatly reduce immunity, cause blood poisoning, necrosis.

Cadaveric venom causes salivation, mucus in the airways, convulsions, as well as diarrhea and vomiting, which depletes the body, causes dehydration. Ptomaines also dramatically suppress the immune system, which is reoriented to neutralize toxins.

The sanitary and epidemiological service (SES) is a state body that deals with the neutralization of premises from corpse poisons.

TERRORISM IN THE UNITED STATES

Burkova T., Yutkina Yu. - the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

In the United States a common definition of terrorism is the systematic or threatened use of violence in order to create a general climate of fear to intimidate a population or government and thereby effect political, religious, or ideological change. According to 2017 report made by

the U.S. Government Accountability Office, "among the 85 extremist incidents that resulted in death since September 12, 2001, right extremist groups were responsible for 62 (73 %) while radical Islamist extremists were responsible for 23 (27 %). The total number of fatalities is about the same for far right extremists and radical Islamist violent extremists over the approximately 15-year period (106 and 119, respectively). However, 52 percent of the deaths related to radical Islamist violent extremists occurred in a single event—an attack on the Pulse nightclub in Orlando, Florida in 2016."

ANOMALIES OF THE CONVOLUTIONS OF THE BRAIN

Burkova T., Yutkina Yu. - the 2nd year students
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

Anomalies in the development of the brain are the result of intrauterine changes in the formation of individual cerebral structures or the brain as a whole. Agiria is an underdevelopment of convolutions and severe disturbance of the architectonics of the cortex. Pachygyria is enlargement of the main convolutions in the absence of tertiary and secondary ones. Micropolygiry - the surface of the cerebral cortex is represented by many small convolutions. Oligogeria is insufficiency of brain convolutions. Macrocephaly - an increase in the mass and volume of the brain, is much less common than microcephaly. Bilateral polymicrogyria of the opercular region is manifested by the pseudobulbar syndrome of Foix-Chavani-Marie. Exencephaly is the complete or partial absence of bones of the cranial vault (acrania) and soft integument of the head. Convolutions of the cerebral hemispheres are located incorrectly. Holoprosencephaly is a disturbance of the separation of the finite brain into the hemispheres. The convolutions are large, located incorrectly, the cytoarchitectonics of the cortex is broken. Arinencephaly - aplasia of the olfactory bulbs, grooves, tracts and plates, with a disturbance of the hippocampus, the absence or hypoplasia of the straight convolutions of the frontal lobes in some cases.

AN ACCIDENT IN THE AMUR COLLEGE OF CONSTRUCTION AND HOUSING IN BLAGOVESHCHENSK

Khomenko M, Malevannaya A. — the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

A student arranged shooting in the class of the Amur College in Blagoveshchensk. One person is killed, three persons are injured. The attacker committed a suicide.
The shooter`s name was Daniil Zasorin. He was a student of the Amur College of Construction and Housing. He was 19 years old. They say that he was an ordinary and calm boy. The attacker was armed with a rifle IZh-81. The security let him come into college building. According to the eyewitnesses, the attacker went out to the toilet and came back with a rifle. When he entered into the class, he kicked out the teacher and began shooting. One of the students tried to stop him, but he killed him. After that he killed himself. At the moment of shooting there were about 20 persons in the class. As a result two persons are dead and three persons are at the children`s regional hospital in serious condition. The official reason of the accident in theAmur College of Construction and Housing is not declared.

DIABETES

Khomenko M, Malevannaya A. — the 2nd year students
Supervisors: Prof. E.A. Borodin, E.A. Volosenkova

Diabetes — is a metabolic disease, characterized by high blood sugar. This disease arises as a result of insulin production defects, insulin action defect or two of these factors. Besides high blood sugar, this disease manifests itself with urinary sugar excretion, excessive urination, increased thirst, disorders or fatty, protein, mineral metabolism and development of complications. It can be in several types:

1. Diabetes of type 1: destruction of beta-cells of the pancreas which produce insulin.
2. Diabetes of type 2: with prevailing insensitivity of tissues to insulin or primary defect in production of insulin with insensitivity of tissues or without it.

The main symptoms are manifested in the following: excessive urination and increased thirst, increased appetite, general weakness, skin, vagina and urinary tracts lesions, more often in untreated patients, as a result of immunodeficiency; blurred vision caused by changes in the light-absorbing medium of the eyes.

Diabetes of type 1 usually starts at the young age, and diabetes of type 2 usually diagnosed with people over 35-40 years old. The diagnosis of the disease is carried out on the basis of blood and urine tests. Blood glucose concentration is determined for diagnosis. The important circumstance - is re-determination of high sugar level on the other days.

In the significant proportion of patients with diabetes, doing dietary guidelines, and achieving a significant reduction in the body mass genius to 5-10 % from the original, blood sugar levels are improving right up to the norm. One of the major conditions — is regular exercise. At a concentration of glucose in the blood, more than 13-15 mmol\l the exercises are not recommended. With mild to moderate exercises not more than 1 hour long, the additional intake of carbohydrates is necessary before and after exercise (15g of easily digestible carbohydrates for every 40 min of exercise).

BREAST ABNORMALITIES

Malevannaya A. — the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

Breast abnormalities include diseases, location-related, the amount and size of breast, and also nipples and areola. More often it happens with women, but it can develop with men too.

Reasons for breast abnormalities

More often the causes of pathology are in the impaired fetal development. The laying of mammary glands begins in the 6^{th} week of pregnancy. Already from the third month milk ducts are formed. Then in the 7^{th} week nipples and areola appear. After the birth the development of breast lasts till the child`s age of two.

Medication, stresses, pregnancy course pathology can lead to the changing of the cycle, and as a consequence, to breast abnormality.

Classification of breast abnormalities:

1. The first group includes true defects. They develop against the background of the hereditary diseases and pathologies, appeared in embryonic period.

2. The second group includes the pathologies, caused by hormonal disorders, injuries and infection.

Types of breast abnormalities:

The following pathologies are distinguished depending on the type of anomaly:

1.Quantity anomalies: amastia-the absence of both breasts, monomastia — when only one breast is present, polymastia-the formation of added rudimentary breast, without a nipple or with it, atelia-the absence of nipples. The anomaly occurs even with normally developed mammary glands.

2. The anomalies of position and shape: breast ectopia or its displacement; micromastia or hypomastia, characterized by small size of mammary glands; asymmetry of the mammary glands to one degree or another observed in most women. (In some cases it is more pronounced, that makes the patients seek help from a specialist); macromastia - on the contrary, is accompanied by pronounced growth of the gland; retracted or flat nipple shape.

EXPEDIENCY OF STUDYING CMF IN THE I YEAR OF ASMA

Onishchenko O. — the 1st year student
Supervisors: Prof. E.N. Gordienko, E.A. Volosenkova

Congenital malformations are an important medical and social problem due to their high prevalence, significant contribution to the structure of causes of infant mortality and disability, high economic costs. According to WHO, 5-6% of children are born every year with CMF, while in 50% of cases these are fatal and severe defects that require surgical correction. Up to 80% of severe CMF resulted in death of a child in infancy.

It can be defined as structural or functional abnormalities that occur and manifest during fetal development and can be identified before birth, during birth, or later in life.

Purpose and objectives: to study the problem of CMF, search for modern definitions, classification of CMF.

1.Topographic and anatomic:

Isolated defects (single, local);

Systemic defects;

Multiple defects.

2.Timer (time of CMF formation):

Gametopathy - malformations, due to impairments of the structure of gametes.

Blastopathies are malformations caused by disorders of blastula formation as a result of teratogenic factors in the first 2 weeks of pregnancy.

Embryopathies - malformations caused by disorders of embryonic development.

Fetopathies - malformations that occur in the fetal period, as a result impairment of the form of the original normally formed organ.

3.Etiopathogenetic (cause and mechanism of CMF development):

Hereditary - the result of mutations.

Multifactorial — the combined effect of gene mutations and environmental factors.

Exogenous - exposure to teratogens.

Conclusions: The beginning of the study of CMF in the first year prepares the student for a complex course "Teratology", the content of which is included in many disciplines and is very popular both in medicine and in ecogenetics.

SARIN ATTACK IN TOKYO SUBWAY

Morozova E., Ivancho P. - the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

The sarin attack in the Tokyo subway was a terrorist attack with the use of the poisonous substance sarin, which occurred on March 20, 1995 at Kasumigaseki and Nagatate stations. According to various reports, from 10 to 12 people died, more than 5,000 were poisoned of varying severity. The organizer of the attack was the neo-religious destructive sect "AUM Shinrikyo". In five coordinated attacks, the perpetrators punctured the bags with sarin wrapped in Newspapers, in subway cars. Directly in attack on March 20, 1995 five pairs, consisting of an executive and driver participated. The main duty of the performer was to enter the subway car, drive a certain number of stations, lower the packages with sarin on the floor of the car and before leaving pierce them with a specially sharpened end of the umbrella. The drivers were waiting at the specified station and had to take the performers to a safe place. Sarin is not the most lethal substance, but a drop of the size of a pinhead is enough to kill an adult. Each performer had 2 bags of sarin with a capacity of 1 liter. The court found the group's leader Shoko Asahara guilty on 13 of the 17 charges and sentenced him to death by hanging in 2004. In total, the court handed down 12 death sentences to the leaders of the organization and those involved.

Shoko Asahara, the head of AUM Shinrikyo, was hanged on July 6, 2018, along with six others convicted in the same case. All other members of the sect who received death sentences were executed on July 26, 2018.

ABNORMALITIES OF THE LEFT VENTRICLE

Alieva Leyla - the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

1. What is left ventricular hypoplasia (Rauchfuss— Kissel syndrome)? Refers to rare congenital heart disease and is characterized by underdevelopment and functional weakness of the left ventricle.

2. Frequency of occurrence. The defect occurs with a frequency of 0.5 to 7.5% of all congenital heart defects. In newborns, this anomaly is the most common cause of death.

3. Anatomical defects. Anatomical defects consist in underdevelopment of the left ventricle and left atrium in combination with stenosis or atresia of the mouth of the mitral or aortic orifice and hypoplasia of the ascending aorta.

4. Clinical picture. The first signs of the defect occur after birth and resemble respiratory distress syndrome, perinatal CNS lesion or shock. In all newborns, severe shortness of breath appears up to 80-100 per minute with the retraction of the compliant places of the chest.

5. Abnormal left ventricular chord, what is it? Fleshy trabeculae, as well as tendon chords (cords, heart strings) are attached to the valve flaps in order to hold the valve flaps. Sometimes during intrauterine development, additional, "extra" fibers are formed.

6. Frequency of occurrence. In 92% cases is betrayed on maternal lines (in rare cases-on paternal). In 90% of the case, the left ventricle" suffers". In the right part, there are also such tissues, but not more than 5% of 100 cases.

7. What causes the development of pathology? To dangerous factors that can provoke the formation of abnormal chord in the heart during fetal development, doctors include: not the right lifestyle, infections that have fallen to the fetus, stress, excessive excitement, etc .

8. Clinical picture. As a rule, the abnormally attached chord of the left ventricle does not show its presence.

TOXOPLASMOSIS — MANIPULATION AS MEANS OF LIFE

Chernomortseva O. - the 1st year student, Chernomortsev I. - the 2nd year student
Supervisors: Doc. Med. Sc. E.N. Gordienko, E.A. Volosenkova

Toxoplasma gondii is a parasitic protozoan which life cycle passes through two hosts: intermediate (any warm-blooded vertebrate, such as a mouse) and final (any member of the feline family, for example, a domestic cat). Being in the intermediate host, the parasite is capable of asexual reproduction. To make a cat more likely to eat an infected mouse, Toxoplasma gondii changes the behavior of mice - they become more active and bold, not afraid of either cats or their smell.

If toxoplasma in a small amount enters a healthy person, it becomes covered with a membrane (turns into a cyst) and is no longer dangerous to a person. Toxoplasma can do the greatest harm to embryo if the mother becomes infected in the first or second trimester of pregnancy.

In addition to the purely physical harm caused by toxoplasma during encystation in the tissues of the body, there is another harm, determined by the interaction of the parasite with the immune system of the host body. For example, when encysting in the brain, toxoplasma provokes a local immune response of the host organism, resulting in an increase in the level of dopamine, a neuromodulator that affects the activity of some parts of the limbic system, the part of the brain that is responsible for emotional mood.

GENERAL ARTERIAL TRUNK AS AN ANOMALY OF THE HEART DEVELOPMENT

Lihno E. — the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

The general arterial trunk (truncus arteriosus communis) is a congenital defect in which the primary embryonic arterial trunk is preserved, as a result of which one vessel emerges from the heart, located above the defect in the interventricular septum.

Types: 1. True general arterial trunk - pulmonary arteries go from the aortic arch either in the form of a general trunk, then divided into two branches, or separately by two branches. 2. False general arterial trunk - the pulmonary arteries are absent, and the blood supply is provided by the bronchial arteries extending from the descending part of the thoracic aorta.

The prognosis for the true type is mostly poor - children die in the first year of life, and in cases of the false type, life expectancy is on average 5 years. The diagnosis is clarified using angiocardiography. Then surgical treatment is performed.

ANOMALIES IN OVARIAN DEVELOPMENT

Murskiy P. — the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

Ovaries, (ovarii) - paired female reproductive glands located in the pelvic cavity. Normally, the right ovary has more pronounced sizes, more abundant blood supply (nutrition from the aorta), and a more developed lymphatic system. With abnormalities in the development of the ovaries, their underdevelopment and a change in shape are possible.

The following types of ovarian development disorders are known: Ovarian agenesis (aplasia) - absence of ovaries. Anovaria is the absence of two ovaries. Ovarian hyperplasia is the early maturation of glandular tissue and its functioning. Ovarian hypoplasia is the underdevelopment of one or both ovaries. Ovarian dysgenesis is an abnormal development, proliferation of connective tissue in the ovaries and the presence of underdeveloped vestigial follicles. There are the XX type and the XY type of gonadal dysgenesis. Ovarian cyst - is single and multiple, single and double-sided. Ovarian retention is incomplete lowering of the ovary with the uterus into the pelvis. Ectopia of the ovary is a displacement of the ovary from its usual place in the pelvic cavity. It can be located in the thickness of the labia, at the entrance to the inguinal canal, in the canal itself. The additional ovary is sometimes found near the main ovaries in the folds of the peritoneum. It differs in small size. The bifurcated ovary is - an unusual form of the ovary as a result of the non-growth of the wolf body.

SKIN REGENERATION

Murskiy P. — the 2nd year student
Supervisors: Prof. I. Yu. Sayapina, E.A. Volosenkova

The skin (cutis) forms the outer cover of the body, the area of which in an adult reaches 1.5-2 m2. The skin consists of epidermis (epithelial tissue) and dermis (connective tissue base). The thickness of the skin in various parts of the body varies from 0.5 to 5 mm.

The reactive properties of the skin are clearly manifested by the action of factors of the external and internal environment. Cellular renewal processes (physiological regeneration) are well expressed in the epidermis. Two types of stem cells of the epithelial differential are distinguished. Some of them are located in the basal layer of the epidermis and are a source of development of the differential of keratinizing epithelial cells of the epithelial-proliferative unit under physiological conditions. These cells also provide regeneration for superficial damage to the epithelial cover of the skin. The second type of stem cells of the epithelium is localized in the external root epithelial vagina, directly under the mouths of the ducts of the sebaceous glands. These cells are a source of development of superficial epithelial cells, epithelial cells of the hair and its epithelial vaginas, gland epithelial cells, and also participate in the regeneration of the skin during its deep and extensive injuries.

In case of traumatic and burn injuries of the skin, reparative regeneration occurs by tightening the edges of the wound due to the development of granulation tissue and epithelization of the wound surface. The outcome of skin regeneration is, as a rule, the formation of regenerates in the form of a connective tissue scar that does not contain skin derivatives

(glands, hair) - a scar type regenerate. Less often, a skin type regenerate is formed. An important cambial role in the epithelization of the wound surface is played by poorly differentiated cells of the end sections of the sweat glands and the external root epithelial hair sheaths. It is taken into account when taking skin grafts for transplantation - after cutting a thin skin graft, the resulting wound surface is quickly covered with a new epidermis.

DIENCEPHALIC ABNORMALITIES

Yunitskaya T. — the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

In diseases of the hypothalamus, temperature regulation can be disturbed, paroxysmal hypothermia occurs with sweating, hyperemia and a decrease in body temperature. In the anterior hypothalamus there is center of sleep; damage to this area leads to insomnia. The posterior hypothalamus provides waking and maintaining the state of wakefulness; destruction of the posterior hypothalamus due is ischemia, encephalitis or trauma may be accompanied by increased drowsiness while maintaining the possibility of awakening. Damages to the ventromedial hypothalamus and premammary region lead to the loss of short-term memory, often in combination with Korsakovs syndrome, attacks of rage, while a state of apathy occurs when the lateral hypothalamus is destroyed. If the hypothalamus is damaged, there may be disorders of thirst sensation.

Anomalies of its development can lead to insufficiency of the pituitary gland function. In the postpartum period with pathological birth, necrosis of the anterior pituitary gland can occur. With complete necrosis of the anterior lobe, this condition is called Simmonds syndrome, with partial necrosis — Skiens syndrome. In hypopituitary syndrome, hormone-producing cells of the anterior pituitary gland are destroyed and hormonal disorders appear in the hypothalamus and pituitary gland, which are manifested by bouts of hyperactivity of the autonomic nervous system.

In case of the thalamus damage, pain and an impairment of all types of sensitivity appear on the opposite half of the body, the emotional sphere and biological motivations suffer.

Apinealism is a congenital absence of the pineal gland (epiphysis), manifested by a disturbance of puberty.

ADULT NEUROGENESIS

Yunitskaya T. — the 2nd year student
Supervisors: Prof. I. Yu. Sayapina, E.A. Volosenkova

Even at the beginning of the 20th century, the loss of neurons as a result of trauma or aging was considered fatal — because scientists insisted on the impossibility of the formation of neurons in adults of higher vertebrates. A serious of Fernando Nottebom articles was one of the turning points in the study of neurogenesis, published in the 80s and 90s. In the course of his work, it turned out that in the brain regions of birds, homologous to the cortex and hippocampus of primates, in addition to death, the formation of a large number of new cells occurs. Further studies showed that active neurogenesis occurs in the dentate fascia of the hippocampus and in the walls of the ventricles of the brain with projections into the olfactory bulbs.

The rate of neurogenesis in humans is estimated at 700 neurons daily. Sexual specificity is absent in these indicators, and with age the activity of the process decreases, while the “quality” of the precursors remains the same. Quiescent neural progenitors begin to share asymmetric mitosis with the formation of amplifying neural progenitor. It, in turn, becomes a postmitotic neuroblast (neuroblast 1). It is at this stage that most cells die. The remaining ones turn into second-order neuroblasts (neuroblasts 2) and then into immature neurons that migrate to the granular layer, where their maturation ends. The complete conversion of a nerve stem cell into a functional neuron takes about a month.

There is currently a debate over the fate of the QNP (quiescent neural progenitor) after division. According to the “optimistic” model, stem cells are self-renewing: as a result of asymmetric division, they give a cell that later differentiates into a neuron, and then returns to a resting state and can be re-activated. In contrast, according to the “pessimistic” model, dentate fascia stem cells are not capable of self-reproduction, and their activation ultimately leads to conversion into astrocytes. It is suggested that the stem cells are used only once during adulthood, leaving this pool after a series of rapid divisions, as a result of which progenitors are formed. It explains and relates to a decrease in the rate of neurogenesis and an increase in the number of astrocytes throughout life.

IMPERFECT OSTEOGENESIS — "SAD SKELETON" IN THE XXI CENTURY

Semerova K. - the 1st year student
Supervisors: Prof. E.N. Gordienko, E. A. Volosenkova

The goal was to study one of the severe syndromes — van der Hoeves syndrome, analysis of clinical manifestations, diagnosis and "touch" to genomics. Osteogenesis imperfecta (brittle bone disease) (OI) is a group of genetic disorders that affect the development of the skeleton, deforming it, severely disabling the patient. In addition to bone fragility, van der Hoeves syndrome is joined by two other symptoms: blue-tinged sclera, hearing loss.

Modern literature suggests that the main mechanism of this connective tissue problem is associated with a lack of type I collagen. Its deficiency occurs due to the amino acid substitution of glycine for more voluminous amino acids in the structure of the triple helix of collagen. As a consequence, mutations occur in COL1A1 or COL1A2 genes. These genetic problems are often inherited from a person's parents by an autosomal dominant type, or arise as a result of a new mutation. Osteogenesis imperfecta is also seen in some rare cases as an X-linked genetic disorder. There are three types of OI that result from collagen mutation (components: CRTAP, P3H1 and CYPB). Mutations in other genes, such as SP7, SERPINF1, TMEM38B, and BMP1, can also lead to irregularly formed proteins and enzymes that lead to a recessive form of osteogenesis imperfecta. At present there are currently links to defects in other proteins caused by genetic mutations ranging in function from structural proteins to enzymatic proteins. There are eight main types, with type I being the least severe and type II the most severe.

Thus, to date, the problem of osteogenesis imperfecta continues to be studied in the aspect of genomic studies, is relevant among other connective tissue dysplasia. Prenatal diagnosis of

this pathology, a competent prognostic diagnosis and the decision of parents to carry a pregnancy are desirable.

NEW APPROACHES AND ALGORITHM OF BRONCHIAL ASTHMA PATIENTS MANAGEMENT

Pernitskaya V., Pernitskiy S. — the 6th year students
Supervisors: Doc. Med. Sc., Prof. O.B. Prikhodko, Can. Med Sc., Assoc. Prof. I..V. Kostrova, E. A. Volosenkova

Bronchial asthma (BA) - still keeps to be a serious public health problem due to its high prevalence and significant damage that it causes to a sick person.

The modern opportunities of BA therapy in most cases allow to achieve success in treatment. A "special type therapy" was developed by experts of the Global Initiative for Asthma (GINA), which goes like an important step towards formalizing decision-making in asthma therapy choosing.

GINA 2019: the most important changes in BA therapy.

Taking into account the patients health safety, GINA does not recommend the SABAs monotherapy at the first step of the treatment anymore.

Low doses of ICS /formoterol/ if they are necessary are considered as a preferred basic therapy /like ICS/ and as a basic symptomatic therapy at all GINA (1-5) treatment stages, forcing out SABAs to another "therapy on demand". At the 4th treatment step there are no high doses of the ICS-LABAs. The 5th treatment step includes the high ICS-LABAs doses with a new clear recommendation of referring patient to a specialist (as pulmonologist and allergologist) for a BA phenotype assessment. A new restriction on using ICS low doses at the 5th step of the treatment and statement of necessity of side effects control and using genetically modified drugs like tiothropy bromidi are recommended.

The Global BA Disease Initiative (GINA) was developed to raise awareness of the disease among healthcare specialists, public health authorities and the society, as well as improve BA prevention and treatment methods through coordinated worldwide efforts.

CLONORCHIOSIS. LONG HISTORY OF STUDY AND SCIENTIFIC RESEARCH

Alatartseva S. — the 1st year student
Supervisors: Prof. E. N. Gordienko, E. A. Volosenkova

Of particular interest is the study of the far Eastern trematodosis in the aspect of the history and relevance of this nosology. The clonorchiasis is chronically occurring helminthiasis in humans and carnivorous animals with a primary lesion of the biliary system and pancreas. The causative agent of clonorchosis is a trematode of the Opisthorchidae-Clonorchis sinensis family.

The symptoms of this disease have been known since Ancient China. The earliest report was obtained by examination of corpses buried in 278 BC in the Jilin district of Hubei province and the tomb of the warring kingdoms of the Western Han dynasty. But the parasite — clonorchus - was discovered and described in 1874, studied in detail in 1910.

A significant contribution to the study of the causative agent of this disease in Russia was made by Professor of the far Eastern state medical Institute Peter S. Posokhov. The field of his scientific interests included the issues of human helminthic pathology in the far East. His Candidates thesis was devoted to the study of the life cycle of clonorchis and PhD - biology and epidemiology of trematode. They were as the basis of the monograph "Clonorchiasis in the Amur region", published in 2004. To study this problem the Amur scientists of BSMI: Ph. D associate Professor, V.A. Kirillov, Professor A. D. Chertov, Ph. D. associate Professor V. A. Dymin, Ph. D. associate Professor I. M. Cheremkin, and R. N. Podolko — BSPU began. In their monograph "Clonorhosis and metagonimosis of The upper and Middle Amur basin (Amur region)" on the basis of literature and their own data, the scientists presented serious material on flukes of the Far East-Chinese and Japanese flukes, which are important in medicine and veterinary medicine.

The result of scientific works is a unique knowledge about the etiology of the parasite, its amazing and complex life cycle, methods and conditions of infestation of hosts (one of which is a person) and prevention.

ANOMALIES OF THE EYEBALL DEVELOPMENT

Alieva Liya — the 2nd year student
Supervisors: Can. Med. Sc., Assoc. Prof. S.S. Seliverstov, E.A. Volosenkova

Anophthalmia - is the medical term for the absence of one or both eyes. True anophthalmia (primary anophthalmia) is an extremely rare defect due to the absence of eye anlages; usually on both sides. The appendages of the eyes are preserved, but their size is smaller than normal. The eyelids are small, the orbit and conjunctival cavity are small as well.

False anophthalmia (secondary anophthalmia) - is caused by a halt in the development of the eye at the stage of the eye bladder or degeneration of the eye glass, which has reached a certain stage of development, as a result of it, a rudimentary eye can be found in the depths of the orbit.

Congenital hydrophthalmus (dropsy of the eye) - an increase in the eyeball, accompanied by lengthening of the sagittal axis, an increase in the diameter of the cornea due to lengthening and expansion of the corneoscleral region.

Myopia (myopia) is a decrease in distance vision due to a mismatch in the posterior main focus and retina with an increase in the sagittal axis of the eye due to the weakest posterior part of the sclera.

CANCER STEM CELLS

Alieva Liya — the 2nd year student
Supervisors: Assoc. Prof. T.L. Ogorodnikova, E.A. Volosenkova

Cancer stem cells (CSCs) are malignantly transformed cells capable of asymmetric division, resulting in one replicating cell of the original cell and one cell that loses its ability to divide asymmetrically, but which has an uncontrolled proliferative potential, usually high invasiveness and often showing signs of differentiation.

Accordingly, the hierarchy of tumor tissue looks like this: cancer stem cells → temporarily proliferating cancer cells → terminally differentiated cancer cells. The last two types of cells form the bulk of the tumor.

The fundamental difference between cancer stem cells and normal stem cells is that cancer stem cells have accumulated several fatal genetic mutations that completely or partially stop the control of normal stem cell division. It causes the unimpeded division of cancer stem cells that transmit accumulated mutations to their daughter cells in the tumor. Over time, cancer cells accumulate new mutations that can accelerate tumor growth.

The cancer stem cell model (CSC) implies that any malignant neoplasm (neoplasia) develops from a single cell. As a result of certain events, the genetic apparatus of a once normal cell is transformed so much that it degenerates into an initiating cancer cell. As a result of subsequent proliferation (division) of this cell, a malignant tumor is formed. According to the concept of CSC, this tumor is hierarchically arranged, that is, different types of cancer cells have different ability to divide.

Cancer stem cells make up only a small population of tumor cells. However, being true stem cells, they (and only they) are capable of an unlimited number of divisions and constant self-reproduction. The number of divisions of the remaining cells, if they are capable of proliferation (that is, formally have a certain stem potential), is strictly limited.

BIOCHEMICAL CRITERIA FOR DRUG INTOXICATION

Alieva Liya - the 2nd year student
Supervisors: Doc. Med. Sc., Prof. E.A. Borodin, E.A. Volosenkova

Each year, the number of people who take drugs is gradually increasing. By June 2017, the number of people suffering from drug addiction in Russia amounted up to 800 thousands.

An increase in the level of poisoning and mortality from an overdose of narcotic drugs entails a growth in the number of forensic examinations for drugs. Today, forensic medical examinations use biochemical methods to determine a number of indicators of blood, urine and organs even in putrefactively altered material.

One common drug, possibly more accessible to the drug consumers, is morphine, a member of the opiate group. According to the literature, opiates metabolize quite quickly. The half-life of morphine in plasma is 2-3 hours, and protein binding is 20-30%.

According to published data, in the diagnosis of opiate drug intoxication, in most cases myoglobin was detected in the urine. By the concentration of myoglobin, it is possible to establish damage to muscle tissue, toxic damage to the whole organism.

It was revealed that morphine anesthesia leads to the development of hyperglycemia and glucosuria. Hyperglycemia and glucosuria were most often observed in cases with toxic concentrations of opiates in the blood.

The indicators of urea and creatinine, bilirubin and urobilinogen characterize the condition of the liver and kidneys. An increased level of creatinine and urea indicates an impaired renal function. The absence of urea in the blood, the presence of bilirubin in the urine may indicate impaired liver function.

THE MAJOR CASES OF TERRORISM IN RUSSIA DURING LAST 10 YEARS

Alieva Liya - the 2nd year student
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

Moscow subway, 2010. An attack on March 29, 2010 before the events in St. Petersburg was the last terrorist attack in the Russian subway. Two suicide bombers set in motion explosive devices at the «Lubyanka» and «Park of culture» stations. 41 persons were killed, 85 were injured. Doku Umarov claimed responsibility for the actions of the terrorists.

A series of explosions in Volgograd, 2013. In October of 2013, a suicide bomber blew herself up in one of the buses of Volgograd. On New Year's Eve, two more terrorist attacks occurred in the city. On December 29, a terrorist detonated an explosive device at the entrance to the railway station, and on December 30, an explosion rang out in a trolleybus. In total, 41 persons died as a result of three terrorist attacks, more than 100 were injured.

Explosion in St. Petersburg subway, 2017. On April 3, 2017, an explosion happened on the stretch between the stations of the St. Petersburg metro «Sennaya Ploshchad» and «Technological Institute». About 10 persons perished, about 50 were injured. The Prosecutor Generals Office of the Russian Federation called the incident a terrorist attack. This is the first case in the history of St. Petersburg subway.

AFLATOXINS ARE SILENT KILLERS

Burkova T., Yutkina Yu. - the 2nd year students
Supervisors: Doc. Med. Sc., Prof. E.A. Borodin, E.A. Volosenkova

Aflatoxins (Aspergillus flavustoxins) are organic compounds, deadly microtoxins belonging to the class of polyketides. Toxin-producing microscopic fungi (micromycetes) of several aspergillus species (mainly A. flavus and A. parasiticus) grow on grains, seeds and fruits of plants with a high oil content (for example, on peanut seeds) and some other substrates. The lethal dose of aflatoxin is 75 mg per 1 kg of the human weight. The toxic dose of aflatoxin is 1.7 mg per 1 kg of body weight. If small doses of mycotoxins are systematically delivered to the human body, then chronic poisoning develops. This condition is characterized by the following manifestations: Impairment of absorption of fats and pigments, impaired metabolism of vitamins and minerals, impaired production of bile salts, increased bones fragility, decreased body defenses, and delayed physical and mental development in children. The effect of aflatoxins: they damage the liver, suppress the immune system, activate oncogenes, damage the DNA of cells, affect the joints, heart, blood vessels, destroy the nervous, hormonal and bone systems, cause cancer.

THE EXPLOSION ON THE TANKER IN NAKHODKA (2.11.19)

Degasyuk V., Bobkina V. — the 2nd year students
Supervisors: Can. Biol. Sc. L.A. Guba, E.A. Volosenkova

On the “Gulf — America” tanker (in Nakhodka) an air-gas mixture exploded, resulting in three deaths. The clap occurred on the cargo deck in the area of the fifth tank. Two dead persons are raised from the water, a third is sought. Two rescue tugboats were sent to the scene. A

criminal case has been opened. At the time of the explosion, the ship was on the roadstead, there were nine persons on board. It was noted that the tanker was empty, oil spills and fire during the explosion did not occur. The “Gulf — America” oil tanker, which is designed to transport any type of oil products, is owned by “Naiad”. The ship was launched in 1989.

ARTERIOLOVENULAR ANASTOMOSES

Likhno E. — the 2nd year student
Supervisors: Assoc. Prof. T.L. Ogorodnikova, E.A. Volosenkova

Arteriolovenular anastomoses (AVA) are vascular connections that carry arterial blood into the veins bypassing the capillary bed. They are located in almost all organs, the diameter ranges from 30 to 500 microns, the length can reach 4 mm.

Functions: regulation of blood supply to organs, regulation of local and total blood pressure, mobilization of blood deposited in venules, stimulation of venous blood flow, venous blood arterialization, regulation of tissue fluid flow into the venous bed, compensatory reactions in case of circulatory disturbance and the development of pathological processes.

Types: 1) True (shunts) - discharge of pure arterial blood; There are simple and with special locking device. 2) Atypical (half-shunts) - discharge of mixed blood through a short wide capillary with a diameter of up to 30 microns.

THE STRUCTURE OF THE CORTIS ORGAN

Saryglar S. - the 2nd year student
Supervisors: Prof. I. Yu. Sayapina, Volosenkova E. A.

The Cortis organ is the peripheral part of the sound-receiving apparatus (auditory analyzer receptor) in mammals, animals and humans. It was discovered by Italian histologist A. Corti. The organ is located on the basilar plate of the membranous labyrinth of the snail. The Cortis organ consists of internal and external supporting cells, internal and external hair (sensoepithelial) cells, between which there is a tunnel, where the processes of nerve cells, which lie in the spiral nerve ganglion, go to the bases of the hair cells. The sound-sensing hair cells are located in niches formed by the bodies of the supporting cells, and have 30-60 short hairs on the surface facing the integumentary membrane. Support cells also perform a trophic function, directing the flow of nutrients to the hair cells. The function of the Cortis organ is to convert the energy of sound vibrations into the process of nervous excitation. Sound vibrations are perceived by the eardrum and through the system of bones of the middle ear are transmitted to the liquid media of the inner ear-perilymph and endolymph.

TRANSVERSE FRACTURE OF THE SACRUM WITH COMPRESSION OF THE SACRAL PLEXUS

Getmanov A., Borozda — the 3rd year students
Supervisors: Doc. Med. Sc., Prof V.V. Grebenyuk, E.A. Volosenkova

Fracture of the sacrum is usually the result of a severe injury. Statistically, patients with this diagnosis are women over fifty years old, or people of different ages who have been injured when falling from a great height. Often statistics shows that the cause of the injury is a suicide

attempt. Among all sacral fractures that occur in 45 percent of the pelvic fracture, this fracture (transverse) occurs in five percent of cases (approximately 6 out of 1000 traumatology patients), since it is a complex combined fracture of both the sacrum and pelvic bones (iliac, pubic) , tailbone. The transverse fracture itself occurs at the level of the 3rd, 4th or 5th sacral segment, which is accompanied by compression of the sacral roots. Sacral fractures in patients with multiple and combined trauma often remain undiagnosed. In most cases, accurate diagnosis of a sacral fracture and its nature, as well as the nature of other related injuries of the pelvis and lumbar spine, is possible by computed tomography (CT) with reconstruction of images in the sagittal and frontal planes. Magnetic resonance imaging (MRI) helps identify hidden fractures. When assessing the nature of the fracture, attention should be paid to the level and type of damage, the interest of the lumbosacral and sacroiliac joints, the presence of other injuries of the pelvic ring.

CHANGES IN THE MORPHOFUNCTIONAL STRUCTURE OF THE RAT TRACHEA DURING ORTHOSTATIC HANGING WITH COLD EXPOSURE

Grigoriev D. - the 4-th year student, Shikul'skiy A., Mikhaylova P., Nesterenko T., Kropotova M. - the 5-th year students

Supervisors: Prof. S.S. Tseluyko, M.M Gorbunov, E.A. Volosenkova

The main task of space medicine is to study the effect of microgravity on the human physiology. Therefore prophylactic measures aimed at preventing the influence of negative factors during staying in space are being actively developed. There is a conditionally pathogenic flora in the human body, which, with a decrease in the immune status and congestion in the upper respiratory tract (in microgravity), can affect the mucous membrane of the respiratory tract as pathogenic. One of the most important protective mechanisms of the lungs is mucociliary clearance. As a result of mucus transport by the mucociliary system, various biologically active and inactive agents are removed. Mucociliary clearance is provided by an effective oscillation of the villi of the ciliated epithelium. The impact of adverse environmental factors has a destructive effect on the morphofunctional structure of the tracheal mucosa and, consequently, on the mucociliary apparatus. The pathological reactions in the mucosa of the trachea which occur in zero gravity at low temperatures are poorly investigated. Effective purification of the respiratory organs from the accumulated secret and, thereby, reducing the influence of pathogenic factors, force researchers to develop methods aimed at preserving mucociliary transport.

ENDOVASCULAR AORTIC VALVE PROSTHETIC METHOD

Prygunov V. — the 6-th year student
Supervisors: Doc. Med. Sc. A.P. Saharyuk, Doc. Med. Sc. O. B. Prihodko,
Can. Med. Sc. I.V. Kostrova, E.A. Volosenkova

Endovascular aortic valve replacement is the only rescue for patients who have been denied surgical treatment, and currently recommended as an alternative therapy for patients at high risk for surgery.

Among patients, the incidence of combined coronary pathology exceeds 50%, and atherosclerotic changes in the carotid arteries and lower limb arteries are found in 100% of cases, but the frequency of significant lesions of these pools does not exceed 20%.

Patients with critical stenosis of the aortic valve before performing endovascular implantation require a complete examination to identify all atherosclerotic lesions and solve the issue of staging the required interventions.

The method of endovascular aortic valve replacement in patients with critical aortic stenosis has good immediate and long-term results. The accumulation of further experience is necessary to determine the effectiveness of the endovascular aortic valve implantation method in patients with different degrees of surgical risk.

MODERN MEDICAL IMMUNOBIOLOGICAL DRUGS (MIBD)

Shevtsova A., Alieva E. — the 5th year students
Supervisors: Can. Med. Sc., Asoc. Prof. Mateishen R.S., Subacheva N.A.

Infectious diseases are the most common on the globe. The epidemics of smallpox, cholera, plague, diphtheria, measles, typhus and other diseases have claimed many lives until recently, causing irreparable damage to human health and economic prosperity. No less dangerous are the epidemics of influenza, meningococcal infection, HIV infection, tuberculosis and other diseases that are currently threat of the health and life of many people. With the start of vaccination, it was possible to completely eradicate smallpox (has not been recorded since 1977) and reduce the incidence of other dangerous infections.

We have prepared a table for the educational process, according to which the data on modern foreign and domestic MIBD used in the territory of the Russian Federation are summarized.

Engerix B. It contains purified primary hepatitis B virus surface antigen (HBsAg), obtained using recombinant DNA technology and adsorbed on aluminum hydroxide. It causes the formation of specific HBs antibodies, which in the titer of 10 IU/L provide protection against hepatitis B.

Pentaxim. The vaccine for the prevention of diphtheria and tetanus disease is adsorbed on a gel carrier; acellular pertussis (acellular); poliomyelitis inactivated-killed (suspension for intramuscular injection), a vaccine to prevent the disease caused by Haemophilus influenzae type b, conjugated with toxoid.

Prevenar®13. Vaccine for the prevention of pneumococcal infection of 13 serotypes. Administration of the Prevenar®13 vaccine causes the production of antibodies to the capsular polysaccharides of Streptococcus pneumoniae, thereby providing specific protection against infections caused by the pneumococcus serotypes included in the vaccine 13. It is combined with any other vaccines included in the immunization calendar of children in the first years of life, with the exception of BCG.

Priorix. It is a combined preparation of attenuated live vaccine strains of measles virus, mumps and rubella, cultivated separately in a culture of chicken embryo cells (measles and mumps viruses) and human diploid cells (rubella virus).

Cervarix. According to epidemiological data, in most cases, cervical cancer is caused by oncogenic human papilloma viruses - HPV-16 and HPV-18. Recombinant adsorbed vaccine for the prevention of diseases caused by human papillomavirus (HPV). It is a mixture of virus-like particles of recombinant surface proteins of HPV types 16 and 18, the effect of which is enhanced using the adjuvant system AS04.

Influenza Quadrivalent. The influenza vaccine is a protective antigen (hemagglutinin and neuraminidase) of epidemiologically relevant strains of influenza viruses of type A subtypes A (H1N1), A (H3N2) and type B of the Yamagata line and Victoria line isolated from the virus-containing allantoic fluid of chicken embryos associated with Polyoxidonium, which has a wide range of immunopharmacological effects, provides an increase in the immunogenicity and stability of antigens, improves immunological memory, and significantly reduces the vaccination dose of antigens.

FEATURES OF THE CLINICAL COURSE OF WHOOPING-COUGH IN VACCINATED CHILDREN

Shevtsova A.—the 5th year student
Supervisors: Dolgikh T.A., Subacheva N.A.

Pertussis currently remains an urgent problem as a result of an increase in the incidence and the abandonment of preventive vaccinations. Even a full-fledged vaccination does not completely protect against possible infection, since the risk of developing a disease is increased significantly after 3 years from the last vaccination. Currently, several million people fall ill every year in the world and about 200 thousand die (in 2008 - 16 million cases, 195 thousand deaths).

Pertussis is an acute infectious disease caused by Bordetella pertussis, transmitted by airborne droplets, characterized by prolonged paroxysmal convulsive (spasmodic) cough, damage of the respiratory, cardiovascular and nervous systems.

In unvaccinated individuals, there are more severe forms of the disease occur, occurring in the form of a typical clinical picture.

In children and adults who have received timely vaccination or vaccination in an incomplete volume, the disease is occured in the eight (the number of attacks of 24-hour coughing a day is no more than 15) and atypical forms: abortive, erased, asymptomatic. The incubation and catarrhal periods are lengthened up to 14-20 days, and the period of spasmodic cough, on the contrary, is shortened up to 2 weeks. It is not characterized by the development of intoxication syndrome.

The abortive form is characterized by the development of a short-term (no more than 1 week) period of convulsive cough after a catarrhal period, after which recovery is occured. In the convulsive period, in contrast to the typical course of whooping cough, vaccinated children rarely have reprisals and vomiting, and hemorrhagic and edematous syndromes are not typical.

The erased form is characterized by the absence of a convulsive period and the presence of a dry, obsessive cough, which is the most dangerous from the epidemiological point of view.

In the asymptomatic form, any clinical manifestations of whooping cough are absent, and the diagnosis is made only on the basis of the data of laboratory research methods. In conditions of high vaccination coverage, PCR diagnostics are considered the most effective, because allows to detect the DNA of the pathogen at a later stage of the disease, in contrast to the bacteriological method of research. The bacteriological method requires the collection of material in the early stages of whooping cough, before the start of antibiotic therapy and long terms for receiving an answer (4-6 days). A feature of serological diagnosis in vaccinated children and adults is a pronounced seroconversion, i.e. increase or decrease by 4 or more times the level of specific IgG and / or IgA (ELISA) or the level of agglutinating antibodies (RA) in the study of paired sera taken with an interval of at least 2 weeks.

In vaccinated children, the incidence of specific complications from the bronchopulmonary and nervous systems is reduced, and they, as a rule, are not life-threatening. There are no fatal outcomes.

Thus, proper and timely vaccination reduces the risk of pertussis and prevents the development of severe forms that lead to complications and death.

CLINICAL CASE - ORDINARY PSORIASIS OF PALMS AND SOLES

Nikolaeva Yu.A., Khlebnikova T.O., Tkacheva A.A., Makarova A.K. - the 6- th year students
Supervisors: Can. Med. Sc. Melnichenko N.E., Subacheva N.A.

According to various sources of literature, the prevalence of psoriasis among the world's population is from 0.6% to 6.8%. In recent years, assessment of the quality of life has become a subject of clinical interest, because of the incidence of psoriasis, in particular, depends on the rapid pace of development of society, which in turn requires high psycho-emotional forces.

The object of the study: a patient F., 69 years old, who was admitted to the Amur Regional Dermatovenerologic Dispensary. Currently receiving treatment: tab. Loratadine 10mg No. 10 for 1 tab. twice a day., solution of Pentoxifylline 2% -5 ml No. 5 intravenously drip for 250 ml NaCl 0.9% (with subsequent transition to the tablet form in a dose of 100 mg No. 60, 1 tab. three times per day), tab. Lipamide 25mg No. 50 on 1 tab. three times per day., sol. of Combilipen 2ml No. 10 intramuscularly., sol. of Reamberin 1.5% 400ml intravenously 10 days, solution of Essentiale 250mg-5ml intravenously 10 days. External therapy: Diprosalik ointment - 20 days, then Naftalan ointment - 20 days. Physiotherapy: local phototherapy. Against the background of the therapy, there is a decrease in hyperemia, a decrease in itching, epithelialization of cracks and a decrease in inflammation.

The presented clinical case of one of the forms of vulgar psoriasis in the area of the palms and soles is of interest from the clinical point of view, as it requires certain knowledge of the differential diagnosis of this disease used in practice.

CLINICAL CASE OF CONGENITAL BULOSE EPIDERMOLYSIS

Volodina I., Kolesov B. — the 6—th year students
Supervisors: Can. Med. Sc. Melnichenko N.E, Subacheva N.A.

According to unofficial statistics, from 2 to 2.5 thousand patients with congenital bullous epidermolysis (CBE) live in Russia. According to world statistics, the disease occurs in one child in 50-100 thousand births. The disease is very severe. Patients are almost all disabled, and disability occurs in the first years of life. These facts clearly demonstrate the relevance of the

problem, both for patients and for doctors. The situation is aggravated by the lack of diagnostic criteria for certain forms of epidermolysis bullosa and effective treatment methods.

Aim. To study the features of the course of CBE on the example of a specific clinical case.

Materials and methods: Clinical and anamnestic analysis of the medical history of a child with congenital bullous epidermolysis was carried out.

Results. Patient R., 2 years old, was in the dispensary registration at the ARCCH since 2017, with a diagnosis of CBE. From the obstetric and gynecological history it is known that 1 child died at the age of 1 year, with a diagnosis of CBE. Patient R., from 4 pregnancies, from 3 births on time. Pregnancy proceeded with complications: chronic placental insufficiency, subcompensated, fetal growth retardation, weight loss. The birth weight was 2410 grams, the body length was 48 cm, the Apgar score was 8/8. The bubble with hemorrhagic contents was primary at birth on the skin of the fingers of the left hand. In dynamics, there was the appearance of new blisters with serous contents, prone to peripheral growth and fusion in other parts of the body: on the skin of the trunk, upper and lower extremities. In place of the opened bubbles, bright red erosion formed. The true symptom of Nikolsky was positive. Turgor tissue was not saved. For 2 years, the patient was under dynamic observation, periodically underwent treatment in a hospital with a diagnosis of Congenital epidermolysis bullous. IDA was of mild severity. There were perinatal encephalopathy and late recovery period.

Last deterioration was in 09/15/19 The patient was taken to the intensive care unit and with a diagnosis of Congenital epidermolysis bullosa. The patient had iron deficiency anemia of severe form, protein-energy deficiency. On examination: areas of epidermolysis on the skin of the limbs, face, chest, neck, anterior abdominal wall. Against the backdrop of a serious condition of the patient due to the underlying disease, death has occurred.

Conclusion. This clinical case is characterized by a progressive course. As you know, effective treatment of CBE has not been developed. There are no cases of recovery. The main and main method of treatment remains proper skin care.

SU JOK THERAPY IN EMERGENCY CASES OF IMPAIRED CONSCIOUSNESS

Molchanov A.—the 5th year student

Supervisors: Can. Med. Sc. Molchanova E.E., Katina O.I.

Loss of consciousness is one of the symptoms of pathological conditions requiring intensive care. The distinction should be made between a transitory loss of consciousness and prolonged unconsciousness — termed comatous condition. The diagnosis and treatment in these cases are difficult. As coma always indicates the severity of the patients state, an adequate and immediate diagnosis, as well as efficient and thoughtful therapy gets a special significance. In such cases the patients life and a positive outcome of treatment depend on the timely performed certain emergency measures.

Among the pathologic conditions manifesting with the transitory loss of consciousness the simple syncope, orthostatic collapse, concussion of the brain, minor epilepsy, conniption fit, and temporary asystolia should be mentioned. The treatment of patients is essentially that of the therapy of the main disease. Su Jok therapy, however, is capable to provide highly efficient methods of emergency medical assistance without the use of drugs. Those methods can heal a person irrespectively of what has caused the loss of consciousness.

In the cases when the loss of consciousness is associated with a reduced blood supply in the cerebrum area, the patient should be placed in a horizontal position, and massaging of the heart and ungual phalanges (the brain correspondence area) points should be started immediately both in the hands and feet. The patients finger tips are recommended to be dipped in the hot water while performing the procedure.

The metaphysically-oriented treatment consists in tonifying the Ah-Hotness energy within the brain pattern, using meridians and byol-meridians for the purpose. The therapist may also stimulate the Hotness chakra (Ajna) with needles or a ring magnet, to paint the Hotness meridians with orange color, or to tonify the Brightness energy or sedate the Darkness energy through the brain and spinal cord meridians.

In the event the loss of consciousness becomes associated with blood pressure increase, including the intracranial one, it is wise to provide for the blood letting with regard to the head correspondence points, using primarily the first (head correspondence) and the third (brain meridian) fingers of both hands for the purpose.

Once consciousness has been restored, the main disease that caused pathologic unconsciousness should be dealt with.

SUMMER PRACTICE IN JAPAN

Chernushevich D., Prygunov V. - the 6th year students
Supervisors: Prof. E.A. Borodin, O.I. Katina

For almost 20 years, there is the exchange of students of the Amur State Medical Academy and the Osaka Medical College. This year we, Chernushevich Daria and Prygunov Viktor, were lucky enough to be there.

As part of our medical practice, we have been visiting a wide variety of places in a Japanese hospital for two weeks. The most memorable ones were the laboratory of Professor Ono, the transfusiological department, and the emergency station with the helipad.

The culture program was also diverse. We became friendly with our Japanese colleagues with whom we visited a lot of sights.

In conclusion it should be mentioned that this trip was very informative and interesting for us. And each of us would gladly visit the Land of the Rising Sun not once.

ECOLOGICAL CONSEQUENCES OF THE LENA RIVER SHALLOWING IN 2019

Ermakova A. A., Gerus V. O. — the 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

The mayor of Yakutsk Sardana Avksentyeva on August 31, 2019 put an emergency regime in the region due to the shallowing of the Lena river.

The water level broke the anti-record of 30 years ago. In some areas, the water level fell almost to 2.5 meters.

The scale of the disaster has reached such a range that all life is now under the threat. Death from drought threatens many species of fish living in this area: perch, grouse, teal, nelm.

The shallowing threatens the spawning of these species of fish. The areas of spawning grounds are decreasing.

Riparian villages, for which the river is a feeder, are also under the threat. Gardens and fields are without watering. As a consequence, people expect the crop failure.

According to meteorologists the Siberian fires are supposed to be the causes of drought in the Republic of Sakha (Yakutia) resulting in the shallowing of one of the largest rivers. The drought formed because of combustion. Lack of rainfall has affected the water level of the river too.

THE QUESTIONNAIRE RESULTS OF PARENTS OF BLAGOVESCHENSK "WHAT DO WE KNOW ABOUT VACCINATION"

Repyeva E., Mongush S., Yusupova N. — the 6th year students
Supervisors: Can. Med. Sc. V.V. Shamraeva, O.I. Katina

In modern living conditions, there is always the possibility of the rapid spread of pathogens of various infections both among adults and children. Vaccination is the most reliable and time-tested measure in preventing the infectious diseases. Its purpose is to develop in the body the immunity to microbes by means of specially designed vaccines. The problem of vaccination in Russia is becoming more and more acute every year. Underestimating the importance of vaccines and vaccination inevitably leads to an increase in infectious diseases.

The purpose of the work is to determine the attitude of parents living in our city towards vaccinating of their children.

To study this problem more thoroughly, we conducted a survey of parents among visitors of the Pediatric Polyclinic No. 3 (Blagoveshchensk) and in the internet resource "survio.com".

145 people from Blagoveshchensk were interviewed. The children age of the surveyed parents was from 3 to 14 years. According to the results of the study, the following data were found out: among the respondents 72% of children were vaccinated in accordance to the vaccination calendar; 16% were partially vaccinated and 12% were not vaccinated. 25% of parents gave the written refusal of vaccination at least once. Only 40% of the children were timely vaccinated according to the national calendar, the remaining terms were shifted due to medical problems or other reasons.

Speaking in general, most parents are aware of the benefits of vaccination and vaccinate their children according to the national vaccination calendar, but almost 6% of parents do not even strive for it. The parental ignorance concerning the given vaccination to their child, its benefits and protective functions is also surprising and alarming. This is especially true for vaccination against pneumococcal infection (27% of parents do not even "know" whether their child is vaccinated).

It should be noted that the scale of the problem and the specific conditions may vary and they must be taken into account when developing specific strategies of increasing the acceptability vaccination level among the population. In order to dispel the fears and doubts and increase the vaccination acceptability, it is extremely important to construct the communication between the podiatrist and the population more effectively.

Vaccination is certainly one of the greatest achievements of medicine. Vaccine prevention is recognized worldwide as the most effective way to fight infections. This year in the Global Health Program not without reason WHO called the refusal of vaccination to be one of the ten most important threats to public health. The WHO believes that when deciding on vaccinations people rely on the advice of doctors, especially local ones who need to be prepared so that they can provide reliable information to their patients. We see that almost 40% of respondents do not even take into account the advice of doctors. And an active "vaccination campaign" should be more confidently promoted in our city, first of all, by the efforts of medical workers and medical students.

CONSEQUENCES OF A FIRE ON A SUBMARINE IN SEVEROMORSK

Hudoleeva M., Kozlova A. — the 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

On July 1, 2019, a fire occurred at the AS-31 «Losharik» nuclear deep-water station, located at the Northern fleet combat training range near the Kola Bay of the Barents Sea. The fire killed 14 submariners.

According to the report of the Ministry of defense on July 2, 2019, the fire on a deep-sea research apparatus designed to study the bottom and bottom space of the world ocean occurred on July 1, 2019 during bathymetric measurements. 14 submariners were stated to die in the fire because of poisoning with burning products. Thanks to timely, selfless and competent actions the submariners liquidated the fire, saved their comrades and the deep-sea apparatus at the cost of their lives.

According to Minister of Defense the army General Sergei Shoigu, the fire occurred in the battery compartment. The nuclear power plant was not damaged and the submarine itself will be repaired as soon as possible. The inquiry of the incident is carried out by an operational investigation team consisting of employees from the Department of military counterintelligence of the FSB and the main military Investigation Department of the ICR.

According to later reports, the deep — sea apparatus was equipped with a new type fleet-lithium-ion batteries for the submarine. Smoke in the battery compartment appeared during docking with the carrier boat. Part of the crew by the order of the deep-sea apparatus commander moved to the carrier through the airlock device, and the rest were involved in the struggle for the survivability of the ship. At a time when the hatch between the two ships was sealed and the rest of the crew, having spent all the fire extinguishing and the insulating breathing equipment, were probably preparing for evacuation, an explosion occurred. As experts later found out the battery had exploded. In memory the names of the victims will be immortalized in the Kronstadt Naval Cathedral.

The burial took place on July 6, 2019 in St. Petersburg at the Seraphim cemetery. The civil memorial service was attended by Deputy Defense Minister Colonel-General Andrei Kartapolov, commander of the Western military district Colonel-General Alexander Zhuravlev, commander of the Navy Admiral Nikolai Evmenov, acting Governor of St. Petersburg Alexander Beglov and Chairman of the city Legislative Assembly Vyacheslav Makarov.

STRUCTURAL FEATURES OF THE PERIRHINAL SINUSES IN CHILDREN

Yunevich A. — the 2nd year student
Supervisors: Pavlova A.E., Katina O.I.

Perirhinal sinuses in newborns are underdeveloped. At birth there are ethmoidal cells in a child. Frontal and sphenoidal sinuses, so as the posterior cells of the ethmoidal labyrinth are in their germinal state. The perirhinal sinuses grow very slowly up to 6-7 years of age. After 6 years there is their intense growth that gets the final sizes by 12-14 years. But they may continue to grow.

The ethmoidal sinus has already been formed, the front and middle cells are well developed, and the posterior ones begin to form from the age of 2 alone with the sphenoidal sinus. Full development ends by the age of 12-14.

The maxillary sinus in the newborn is a narrow fissure. The close anatomical location of dental germs to the bottom of the eyelid contributes to the development of orbital complications in various dental diseases. The case never occurs in older children and adults. In children the maxillary sinus opening is relatively wider and longer than in adults. At the age of 3-4, the maxillary sinuses are well marked.

The frontal sinus has been developing since the first year of life. It appears at the age of 3 and is clearly marked by the age of 6.

The sphenoidal sinus in newborns has the form of a fissure up to 2 mm in length. The pneumatization begins at the age of 2-3. By the age of 14 the sinus is well marked.

YOUNG FAMILY IN THE MODERN RUSSIAN SOCIETY

Ivashchenko V., Rodionova A. — 5th year students
Supervisors: Prof. E.A. Sundukova, O.I.Katina

The relevance of the research. The turn of the century, the turn of the millennium for the world community is the moment of comprehending the achievements of peoples and states, assessing unsolved problems, and forecasting the prospects for social development. At the beginning of the 1990s, Russia embarked on the path of democratic transformations and the transformation of all aspects of state and public life.

The demographic situation in Russia remains unfavorable - a negative natural population growth while maintaining the current depopulation rate in the next decade will reach the highest rates among all countries of the world. Russian society is aging, and this circumstance should be the subject of careful analysis and management decisions, the development of a more effective state demographic policy.

The reproductive behavior of young women has changed significantly: birth rates decreased in the group of 15-29-year-old women. In young families (which account for the bulk of child births) the desire to have a child is increasingly delayed for an uncertain future due to life disorder and the influence of various social risk factors.

The aim of our research was to study the problem of transformation of the institution of the family and its impact on demographic processes in Russian society.

Materials and methods. The object of the sociological study was students of the 5th and 6th courses of the ASMA. The survey was conducted anonymously.

Results. When conducting a sociological study among senior students of the ASMA, it turned out that 18% of the respondents are officially married at the moment, 80% are not married, -1% are divorced. 60% of married respondents do not have children because of the lack of their own housing, and also because of material problems. A certain role is played by the desire of young people for professional growth. The vast majority of young people in the future plan to have two children (70% of respondents) and 15% of respondents plan to have one child.

The fact that the absence of one of the parents in young peoples families does not affect the desire to start their own full-fledged family remains interesting. On the contrary, there is an incentive not to make such mistakes in the future.

Thus, the specifics of the formation and functioning of a young family requires a special approach to solving its problems in the implementation of state social policy. The state must guarantee to the family the achievement of the level of well-being necessary for its independent existence, self-sufficiency and self-development and the implementation of basic functions. Therefore, the strategic goal of implementing state family policy in relation to a young family is to create conditions for the formation and development of a young family as a full-fledged subject of Russian society.

THE CONSEQUENCES OF CHILDREN DESTRUCTION IN RUSSIA

Badmaeva G., Ksenofontova M.- the 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

According to the statistics the average number of killed children per year in our country is 2-3 thousand. The given data show that “more than 60% of juvenile killings were committed on domestic grounds, including conflicts with coevals. About 20% of crimes are the results of robberies". For 9 months of 2018, "1292 children died at killers hands”.

The court of Saratov sentenced the mother and stepfather of a 7-year-old boy Sasha Rodin, who died from systematic beatings. The defendants have been mocking the child for several days. Experts counted more than 100 hematomas on the boys body. Sashas death came from a “dull combined trauma of the body with hemorrhages under the lining of the brain, brain contusion, and kidney bruises”.

ABOUT CATARRHAL SYNDROME IN CHILDREN WITH ROTAVIRUS INFECTION

Ionova N.—the 5th year student
Supervisors: T.A.Dolgikh, O.I.Katina

Rotavirus infection is an acute anthroponic infectious disease with a fecal-oral transmission mechanism caused by rotavirus and characterized by gastrointestinal lesion as gastroenteritis with the development of dehydration syndrome.

Based on the structure of the group antigen, rotaviruses are divided into 7 serogroup (A-G). Most human pathogenic rotaviruses belong to serogroup A that is subdivided into I and II subgroups. The latter one includes up to 70-80% of strains released from patients. Rotavirus

serotype A is widespread worldwide, on the territory of Russia it is more often detected on the Black Sea coast. Up to 25 million cases are registered annually, 600 - 900 thousand of them (i.e. 2.4-3.6%) are with a fatal outcome. WHO estimates that rotavirus results in 453,000 deaths of children under five that makes about 40% of all diarrhea-related hospitalizations in children under five worldwide.

The main mechanism of rotavirus transmission is fecal-oral. Recently, the aerogenic transmission mechanism, which is implemented in close contact with the infected person, has become the most relevant. Rotavirus infection can occur under the ARVI mask manifesting by respiratory tract injury syndrome in the form of coughing, rhinitis and/or sneezing. Much less often in childhood, catarrhal otitis and/or conjunctivitis develops. In children of early age, convulsive syndrome may develop during the acute period of rotavirus infection against the background of febrile temperature. Convulsions more often tonic-clonic are generalized and accompanied by loss of consciousness and caused by the development of an encephalic reaction.

WHO estimates that annual child mortality can be prevented or reduced through immunization. Two oral live attenuated rotavirus vaccines - Rotarix™ (received on the basis of a strain of G1P of a rotavirus of the person) and RotaTeq™ (5 reassortant strains of human and bull rotaviruses of serotypes G1, G2, G3, G4 and R1A). WHO recommends the inclusion of these vaccines in all national immunization programs. Both of these vaccines are used in Russia for epidemiological indications.

Thus, the severe incidence of children with rotavirus infection spread by different transmission mechanisms, including aerogenic, can now be significantly reduced by the use of modern vaccines from the age of 6 weeks.

FIRES IN THE BAIKAL TERRITORY AND THEIR BIOMEDICAL SIGNIFICANCE 2015-2019

Grebneva V., Arslanova M. — the 2nd year students
Supervisors: Can. Biol. Sc. Guba L. A., Katina O.I.

Baikal is a lake of tectonic origin in the southern part of Eastern Siberia, the deepest lake on the planet, the largest natural reservoir of fresh water and the largest freshwater lake by area on the continent. For five years (2015-2019) there have been many fires of various sizes in the Baikal natural territory.

2019 year. It was possible to defend the Baikal National Park. There the ignition is localized on an area of 1250 hectares. This was reported on the website of the Federal Aviation Safety Agency. The largest fire got to the village of Bolshoy Goloustnoye. The inhabitants of this village were evacuated by buses. There were also several more villages in the area of ignition.

2017 year. Two forest fires have been registered on the territory of the Baikal-Lensky Reserve and the Pribaikalsky National Park. The cause of the fires was a dry thunderstorm. Both fires with a total area of 4.2 hectares were in remote mountainous area. The east coast was covered with smoke and Ulan-Ude was in the zone of smoke settling.

2015 year. “Baikal — the burning summer of 2015”. Forest fires, the area of which amounted to hundreds of thousands of hectares, did not stop in Buryatia and the Irkutsk region. The fires lasted for several months. Not only the area around the lake was burning, but even Olkhon Island was captured in flames.

The consequences of fires:

- the destruction of trees and vegetation by fire;
- a huge amount of smoke containing hazardous pollutants such as carbon dioxide, carbon monoxide and nitric oxide is emitted into the atmosphere;
- residents of cities and towns suffer from smoke (smoke is especially dangerous for children of the first year of life and newborns. Under the influence of smoke, there is the increase in the frequency of congenital heart defects and respiratory diseases).

ABNORMALITIES OF THE SPINAL CORD GROWTH

Elchin A. - the 2nd year student
Supervisors: Pavlova A.E., Katina O.I.

Diplomaelia is a doubling of the spinal cord in the area of cervical or lumbar thickening. The entire spinal cord is doubled occasionally. The defect is extremely rare. It occurs before the closure of the neural tube as a result of separate closing of each half of it. Hernia of the spinal cord — is a combined malformation due to a defect in the closure of the neural tube. The defect is manifested by the protrusion of the brain membranes, spinal nerve roots and spinal cord matter through a hole formed as a result of congenital spinal column. The most frequent localization of it is the lumbar-sacretic department.

Syringomyelia is an appearance of cavities in the substance of the spinal cord, more often in the cervical department. They are different in size and their wall is formed by glial tissue. The anterior, lateral and posterior horns of the spinal cord are destroyed. Around the central channel of the spinal cord there is the glia growth. These changes lead to the atrophy of the muscles of the hands, shoulder girdle, trunk and neck.

Hydromyelia is dropsy of the spinal cord.

Klippel-Feils syndrome is a growth anomaly of cervical and superthoracic vertebrae, combined with the liquor outflow violation and underdevelopment of the spinal cord in the cervical and superthoracic regions. Klippel-Feils syndrome is manifested by a triad of symptoms — shortening of the neck, up to its absence (when the chin rests on the sternum and earlobes touch the shoulders), low hair growth and the restriction of head movements.

DRESSLER'S SYNDROME

Ivashchenko V. — 5th year student
Supervisors: Can.Med.Sc. I.V. Kostrova, Prof. O.B. Prikhodko, O.I.Katina

Dressler's syndrome is still one of the most mysterious complications of heart attack.

It got its name in honor of the American therapist William Dressler (William Dressler, born 1890), who first described it in 1955. Dresslers syndrome is understood as a symptom complex that develops as a result of heart attack, pericardiotomy or mitral commissurotomy. The

symptom complex includes: fever, leukocytosis, symptoms of exudative pericarditis and (or) pleurisy, often with hemorrhagic exudate, pneumonia with hemoptysis (Lazovskis I. R., 1981). When this symptom complex develops after a heart attack, the more precise term "post-infarction syndrome" is used instead of the term Dresslers syndrome.

An autoimmune heart disease in which pericardial tissue is affected, most often the disease occurs on the 2nd-6th week from the onset of heart attack. The cause of the development of the disease is the lack of oxygen in the muscle layer of the heart. Most often, Dresslers post-infarction syndrome is observed in the case of extensive heart damage.

In general, the pathogenesis of this disease has been sufficiently studied and its cause is the death of cardiomyocytes due to acute hypoxia, often total. The larger the area of damage is, the higher is the risk of developing this syndrome.

The development mechanism may be represented in three stages:

1. The first stage is a heart attack and death of muscle fibers of the heart.

2. The second stage is the formation of autoantibodies to their own cells, the immune system begins to perceive dying cardiomyocytes as something hostile, and healthy body cells also fall under the immune response.

3. The third stage is the stage of clinical manifestations caused by damage of target cells.

For a post-infarction syndrome, the appearance of a typical symptomatic triad is characteristic: inflammation of the heart membrane; pleural inflammation - the membrane covering the lungs and chest wall; pneumonia. Pericarditis in this syndrome most often does not proceed severely. The patient has persistent and non-acute pains in the region of the heart that do not stop even after taking nitroglycerin. The duration of pain may be about 30-40 minutes or more. There is a general feeling of weakness, low-grade fever. With pleurisy, the patient feels pain in the chest that intensifies when breathing. Autoimmune pneumonia occurs in patients much less often than pericarditis and pleurisy; the most common symptom is shortness of breath. An analysis of the past history, disease history and family history is made, complaints are taken, a physical examination of the patient, a general blood test, a biochemical blood test, and a general urinalysis are performed. From instrumental methods electrocardiography, echocardiography, chest x-ray, magnetic resonance imaging, computed tomographies are performed. Cardiologist consultation is required. During the medical treatment of post-infarction syndrome glucocorticoids, non-steroidal anti-inflammatory drugs are prescribed to the patient.

The development of complications is possible: a constantly recurring course of the disease, the duration of the relapse can be from 2 weeks to 2 months. Specific methods of prevention have not been developed. In order to prevent the relapse, the patient is prescribed taking such drugs as: non-steroidal anti-inflammatory drugs, glucocorticoids.

Early rehabilitation of patients with myocardial infarction significantly reduces the manifestations of post-infarction syndrome. It should be understood that this disease is chronic and it is important not only to receive the full amount of treatment during the period of the disease manifestation, but also to maintain the achieved condition without allowing dangerous complications to develop.

CARDIOVASCULAR DISEASES AMONG ATHLETES OF THE AMUR REGION

Byshlyaga O. — the 2nd year student
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

Cardiovascular diseases in athletes are often asymptomatic and therefore often remain unrecognized that increases the risk of life-threatening conditions and sudden cardiac death.

The solution to this problem comes to the fore primarily because sudden cardiac death (SCD) remains to be a huge social and medical problem. According to a number of authors, the risk of sudden death among athletes is 5-10 times higher than among physically inactive people. Among the causes of BCC in athletes the hypertrophic cardiomyopathy is called more often.

Adequate physical activity increases the efficiency of the functioning of the cardiovascular system, but an excessive exertions as well as insufficient motor activity, especially in combination with psycho-emotional stress, lead to the development of physical overstrain of the cardiovascular system. In athletes with intense loads, in addition to stress and physical effects, in the pathogenesis of physical overstrain of the cardiovascular system in the Amur region, the frequent change of time zones perhaps plays an additional role. As a result there is a desynchronosis of the daily rhythms of the vegetative functions of the body (the time difference during flights Blagoveshchensk-Moscow is 8 hours). Failure of cardiovascular system adaptation is expressed in the phenomenon of myocardiodystrophy on the basis of physical overstrain, the frequency of which, according to different authors, is from 7 to 17%in athletes.

CLINICAL AND ANATOMICAL FEATURES OF THE NAIL PLATE IN DISEASES OF INTERNAL ORGANS

Shevchuk A. - the 2nd year student
Supervisors: Pavlova A. E., Katina O.I.

Doctors have known since ancient times that in different diseases nails have a different appearance. The thickness of the nail plate, its shape and color, fragility and dashes on the nails can be suspected of many diseases. The nails of a healthy person are smooth, shiny, pale pink, with a pronounced whitish hole at the base.

In cardiovascular diseases, nail plates may be white or cyanotic. Lunules (light crescents at the base of the nail) become too large and occupy 2/3 of the nail plate. The Bo lines, the transverse lines on the nail plate up to one millimeter in depth, occur less often.

In diseases of the lungs there is also a cyanosis and "drumsticks" - deformity in which the nail plate is flattened and becomes convex resembling the hour glass. The appearance of white specks on the forefinger indicates the accumulation of calcium in the lungs.

With anemia, the nail plates are pale, may be very thin. When iron deficiency anemia the striation (white stripes) on the nails may be observed. Brittleness of nails is also possible.

In liver diseases, nail plates become duller, yellowish and rough to the touch.

In diseases of the digestive system, the nail plate becomes white and more than 25% of its surface may be covered with longitudinal grooves.

In renal failure, the "Half on half" syndrome develops. One part of the nail plate is white and the other one, closer to the tip, is brownish.

FEATURES OF ACUTE CORONARY SYNDROME COURSE IN PATIENTS WITH DIABETES MELLITUS

Kim M. — 3rd year student
Supervisors: Can. Med. Sc. Magalyas E.V., Katina O.I.

Diabetes mellitus (DM) is one of the most important problems of modern medicine due to the steady growth of morbidity, accompanied by early disability, multiple complications, and high mortality. The most serious complication of type 2 diabetes is coronary heart disease with the development of MI. The course of coronary heart disease is often complicated by an acute coronary syndrome, which is united by a single morphological substrate-an unstable atherosclerotic plaque that has lost its integrity during aseptic inflammation. The loss of its integrity predetermines the formation of a blood clot, leading to partial or complete occlusion of the coronary artery. According to international registers, about 19-23% of patients, hospitalized with acute coronary syndrome, have type 2 diabetes.

In the cardiology department of Blagoveshchensks municipal clinical hospital the study of patients with acute myocardial infarction was conducted. Its aim was to reveal the effect of carbohydrate metabolism disorders on the development of acute coronary syndrome.

The study included 48 ACS patients (average age - 65 years): 19 men (average age-65 years) and 27 women (average age -71 years). Before hospitalization all patients were diagnosed with type 2 diabetes the duration of which was 9-13 years. Though, the age of coronary heart disease in men is on average 67 years and in women - 74 years.

Risk factors for acute coronary syndrome in diabetes include: hereditary diseases -79%, hypertension -92%, dyslepidemia -63%, smoking-42%, obesity 75%, overweight -87%, low physical activity-40%. All examined patients had a combination of two or more risk factors-82%. The most common factor was obesity and hypertension. Occurring comorbidities were diabetes, atherosclerosis, and hypertension. The average body mass index was 30.1, along with it there was the first degree of obesity and overweight. Waist size in men was 98 cm, in women -85 cm. 17% of patients asked for help in the first 6 hours from the onset of symptoms, 29% - from 6 to 24 hours, and 54% of respondents were hospitalized after 24 hours. 29% had atypical pain syndrome, and 71% had painless onset. ECG revealed the signs characteristic for ischemia in 84% of examined people: pathological Q wave, St segment elevation, depression, negative R wave, negative T wave. Myocardial infarction was predominantly localized in the anterior wall of the left ventricle. The right type of coronary blood supply prevailed. The results of angiography revealed a decrease in collateral blood flow. Hypofibrinogenemia was found in 81% of cases during the biochemical analysis of blood, the level of glucose on the empty stomach was on average 8, 6 mmol/l, troponin increased in 46% of creatine phosphokinase-up to 140 IU (fraction MB-11%_-78%, fibrinogen is 8G/l in 72%. C reactive protein was positive in 49%, leukocytes increased to 13 * 10^9 / l in 65%.

The given study revealed that in patients with DM the clinical picture of an acute coronary syndrome may appear in an atypical form due to polyneuropathy that manifests with a decrease in pain sensitivity. In its turn that leads to a delay in hospitalization and, as a consequence, serious complications may occur. In addition, the fulminant nature of the flow is due to a

decrease in collateral blood flow due to multi-vascular lesions of the bloodstream. In this regard in patients with DM the acute coronary syndrome often leads to the formation of a higher functional class of heart failure.

MYOCARDIAL INFARCTION MARKERS

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

For the diagnosis of myocardial infarction (MI), an anamnesis and physical examination, data from instrumental studies, determination of cardiomarkers in the blood are used. Since 25% of all MIs are not reflected on the cardiogram, a necessary diagnostic method is the determination of biochemical markers. Biomarkers are enzyme-isoenzyme indicators that are used as an indicator of the state of the whole organism. In MI the contents of a dead cell enter the bloodstream and may be determined in blood samples.

Currently, for the diagnosis of myocardial infarction, it is recommended to use two types of markers simultaneously — the early one and the late one.

Early markers: myoglobin, creatine phosphokinase (CPK), the heart form of a fatty acid binding protein.

Late markers (unlike early ones appear after 6-9 hours): lactate dehydrogenase (LDH), aspartate aminotransferase (AsAT), cardiac troponins I and T.

A biochemical marker should have maximum sensitivity and specificity, be detected early and at the same time to retain a diagnostic value for a sufficiently long time.

CARDIAC CONDUCTIVE SYSTEM

Andriyash N. — the 2nd year student
Supervisors: Assoc. Prof. Ogorodnikova T.L., Katina O.I.

The human heart beats 2.5 billion times during a normal lifespan, a feat accomplished by cells of the cardiac conduction system (CCS). The functional components of the CCS may be broadly divided into the impulse generating nodes and the impulse propagating His-Purkinje system. The conduction system diseases of a human that alter impulse generation and its propagation were identified. CCS dysfunction is primarily due to acquired conditions such as myocardial ischemia/infarct, age-related degeneration, procedural complications, and drug toxicity. Inherited forms of CCS disease are rare, but each new mutation provides invaluable insight into the molecular mechanisms. Applying a multidisciplinary approach, which includes human genetic screening, biophysical analysis, and transgenic mouse technology, has yielded a broad array of gene families involved in maintaining normal CCS physiology. This review observes the gene families that have been implicated in human CCS diseases of rhythm, conduction block, accessory conduction, and development. Also the evolving therapeutic strategies that may serve as adjuvant or replacement therapy to current implantable pacemakers are investigated.

Wolff-Parkinson-White (WPW) syndrome is characterized by preexcitation of ventricular myocardium via an accessory pathway (bundle of Kent) that bypasses the normal slow

conduction through the AVN. Ventricular pre-excitation is common with a disease prevalence of 1.5—3 per 1000 people. Histological estimation of Kent bundles, resected from examined people, displayed features of typical ventricular myocytes with expression of Cx43. The expression of high conductance gap junctions in bypass tracts enables them to pre-excite ventricular myocardium, manifesting as a short PR and a slurred QRS complex, or "delta wave", on the ECG. The vast majority of WPW cases are sporadic and the main mechanism remains unknown; however, rare inherited forms have been reported. Vidaillet determined that 3.4% of probands with WPW had one or more first-degree relatives with accessory conduction. PRKAG2 gene a familial form of WPW with an autosomal dominant mode of transmission was identified in two families. 31 affected individuals had evidence of pre-excitation and cardiac hypertrophy. A missense mutation in PRKAG2 was identified that resulted in a constitutively active form of the γ2 regulatory subunit of AMP-activated protein kinase (AMPK). Under normal conditions, AMPK responds to energy-depleted states by increasing glucose uptake and promoting glycolysis. Transgenic mice expressing a heart-restricted constitutively active mutant, PRKAG2N488I, recapitulated the human WPW phenotype of cardiac hypertrophy, pre-excitation, and conduction defects. The predominant histological finding was ventricular myocyte engorgement with glycogen-laden vacuoles. The disruption of the annulus fibrosus by vacuolated ventricular myocytes resulted in the pre-excitation phenotype. The current standard of care for symptomatic bradycardia due to conduction system disease is the implantation of an electronic pacemaker. Despite their success, electronic pacemakers have limitations, which include the lead complications, finite battery life, infection probability, lack of autonomic responsiveness, and size restriction in younger patients. These limitations have spurred on the development of biological pacemakers; the premise of which is to restore pacemaking activity using viral-based or stem cell-based gene delivery systems. The identification and characterization of genes involved in generating pacemaker currents has allowed the biological pacemaker technology to become a reality.

Although standalone biological pacemakers may be far into the future, adjuvant biological pacemakers may find real-world utility for current deficiencies of electronic pacemakers, such as limited battery life and device infections. For example, biological pacemakers in conjunction with device therapy may be used to extend battery life, decreasing the frequency of generator changes. Transient injectable pacemakers may also function as bridge therapy after lead extraction of an infected device. The need for adjuvant biological pacemakers is clear. But continued refinement of gene and cell-based delivery systems will be necessary to make this technology a reality.

ACUTE CORONARY SYNDROME IN YOUNG PEOPLE

Diyanshina S. — the 3rd year student
Supervisors: Can. Med. Sc. E.V. Magalias, O. I. Katina

The prevalence of acute coronary syndrome (ACS) among younger patients is lower compared to the older population. According to the WHO, the number of people under the age of

40-45 suffering from ACS is about 10%, however, this disease at such an early age has a high risk of mortality, and it also deprives people of potential years of life.

The aim of the research was to study the features of the course of acute coronary syndrome in young people. A total of 43 patients with ACS who were admitted to the emergency cardiology department of the GAUZ JSC Blagoveshchensk City Clinical Hospital aged 30 to 44 years ± 1.5 years were examined. At the same time, the average age of men was less than that of women and was 37 ± 1.3 years, for women 40 ± 4.1 years. By gender, men predominated - 27 (67.5%), women were 16 (32.5%). The duration of IHD in patients averaged 3 years ± 1.5 years.

Risk factors for coronary heart disease were observed in all patients: arterial hypertension of 33 (77.5%) patients, dyslipidemia - 26 (60.3%), smoking - 22 (50.5%), overweight - 5 (10.5%), obesity - 3 (7.9%).

A combination of two or more risk factors was observed in 35 (87.5%) patients, among them a more frequent was the combination of smoking, arterial hypertension, dyslipidemia, and overweight.

In the first 6 hours from the onset of the disease 5 (11.63%) patients sought medical help, from 6 to 24 hours - 9 (20.9%) patients, after a day - 29 (67, 4%) people.

An important clinical symptom of ACS is a pain symptom. A typical anginal attack was detected in 25 (60%) patients, an atypical anginal attack with a mild pain symptom in 15 (35%), and an asymptomatic course in 4 (5%) patients. 27 (62.5%) patients experienced chest discomfort, severe weakness, shortness of breath, dyspnea, palpitations.

Myocardial infarction was observed in 31 patients (71%), in the remaining 12 (29%) - unstable angina pectoris. Pathological Q wave was observed in 17 (39.5%) patients. When analyzing the localization of myocardial infarction, anterior lateral MI was recorded in 21 (48.8) patients, the lower one in 12 (27.2%), spread on anterior side in 6 (13.9%), and spread on posterior side 4 (10.1%).

The troponin test was positive in all patients with myocardial infarction, an increase in creatinine phosphokinase - MV fraction was observed in 36 (83.7%) patients, hyperfibrinogenemia - in 30 (69.8%) patients, C-reactive protein - in 23 (53.5 %) surveyed. In a clinical blood test, leukocytosis was recorded in 26 (57.5%) patients.

Thus, ACS in young people proceeds typically, pain is pronounced. A combination of several risk factors for cardiovascular diseases, such as arterial hypertension, smoking, dyslipidemia, and overweight, is more often detected.

PATHOGENESIS OF MULTIPLE SCLEROSIS

Buinova J. — the 2nd year student
Supervisors: Batalova T. A., Katina O.I.

Multiple sclerosis (MS) was first described in 1868 by the French neurologist Jean Martin Charcot. Now it is one of the most common chronic diseases of the central nervous system (CNS), affecting people of almost all ages, but giving "preference" to young women living in the northern latitudes. In MS, the bodys immune system attacks its own myelin — the membrane surrounding the axons of nerve cells and affecting the rate of transmission of an electrical

impulse through them. Being without a protective myelin layer, the fibers of nerve cells become vulnerable and may die.

At what point does the disease begin? Despite the fact that the central nervous system is damaged primarily in MS, the start of autoimmune processes does not occur in it. The activation of autoreactive T and B lymphocytes occurs on the periphery - primarily in the lymph nodes.

Mechanism:

1. Primary activation of lymphocytes. To overcome the protective mechanisms of the brain, autoreactive lymphocytes are activated outside the central nervous system. The signal for this is its presentation of antigen or autoantigen by antigen-presenting cells (APC). As a result, activated autoreactive T- and B-lymphocytes produce cytokines, powerful inflammation inducers by themselves.

2. Lymphocytes in the brain. A key stage in the development of MS is an increase in BBB permeability. Under the influence of inflammatory cytokines, a whole series of fatal events occurs, leading to the disruption of tight contacts in the endothelium. As a result, the gaps appear in the BBB that facilitate the mass migration of pathological cells from the vascular bed to the central nervous system.

3. Secondary activation of lymphocytes. Resident agroindustrial complexes are activated. They present autoantigens (myelin proteins) to T-helper cells in the central nervous system.

Neurodegeneration in the central nervous system is the death of nerve cells, leading ultimately to a complete stop of the transmission of nerve impulses. In MS, it develops independently of autoimmune inflammation.

The mechanisms leading to neurodegeneration in MS:

1. Excitotoxicity caused by glutamate leads to the death of oligodendrocytes and neurons.

2. There is the redistribution of ion channels and the change in their permeability in the axons of neurons that leads to disruption of the ion balance, and for the axon it ends in damage and death.

3. Imbalance of remyelination factors (nerve growth factor and brain neurotrophic factor) necessary for the survival of oligodendrocytes and neurons.

So, the described series of pathological events leads to the formation of demyelination sites on the nerve fibers, death of oligodendrocytes and neurodegeneration. The rate of transmission of a nerve impulse from neuron to neuron decreases. As a result various body systems stop receiving signals from the brain and symptoms of the disease occur.

MODERN ANTIHERPETIC AGENTS

Ushakova V., Kim M.— the 3rd year students
Supervisors: Doc. Med. Sc. G.I. Chubenko, O.I. Katina

Herpes zoster (herpes Varicella Zoster) — appears due to reactivation of the herpes virus type 3 and is characterized by inflammation of the skin and nervous tissue. Herpes zoster appears in a person with a significant decrease in immunity, injuries, burns, etc. Frequency of herpes zoster in various countries of the world is from 0.4 to 1.6 cases per 1,000 patients per year under the age of 20 years and from 4.5 to 11.8 cases per 1,000 patients per year in older age groups.

The probability of herpes zoster occurring during life is up to 20%. The main risk factor is a decrease in specific immunity to Varicella zoster virus that appears against the background of various immunodeficiency states. Most researchers noted increase morbidity in older age groups, immunodeficiency associated with the weakening of cellular immunity (HIV infection, conditions after transplantation, cancer, etc.). Herpes zoster affects up to 25% of HIV-infected persons that is in 8 times higher than the average incidence in people aged 20 to 50 years. Among patients of transplantation and oncological hospital departments up to 25-50% of patients with lethality up to 3-5% get sick with herpes zoster. Relapses of the disease appear in less than 5% of ill persons. The following antiherpetic agents are most often prescribed: Acyclovir; Famciclovir, Valaciclovir; Amixin; Viferon, Famvir, Valtrex.

In the treatment of herpes zoster of patients with immune disorders, the therapy of choice is intravenous injection of acyclovir. The treatment of herpes infection may be etiotropic, pathogenetic and symptomatic. Currently the emphasis is on etiotropic therapy. Etiotropic drugs include acyclic analogues of guanosine, interferons and immunoglobulins. The leading place among etiotropic approaches is occupied by antiviral chemotherapy, represented by a large group of acyclic nucleoside analogues. Immunotherapy of herpes virus infections, combining interferon and immunoglobulin preparations, is an additional and important component of etiotropic treatment.

Acyclovir. The indisputable advantages of acyclovir are high selectivity and low toxicity. As for disadvantages they are the impact only on the replicating virus and the possibility of forming resistance to the drug. The drug, getting into the diseased cells that contain viral thymidine kinase, begins to phosphorylate and turns into its active metabolite-acycloguanosine triphosphate. Thereby the inhibiting DNA polymerase of viral harmful agents occurs. The active component has a high selectivity of action, which is caused by the absence of viral thymidine kinase in healthy human cells. It is highly effective due to the accumulation of herpes virus in the affected cells. Similar action has: Valaciclovir, Famciclovir, Ganciclovir, Valganciclovir, Foscarnet.

Conclusion: Herpes diseases today are widely spread. The bases of modern immunotherapy of herpes virus infections are preparations of interferons and immunoglobulins. Immunotherapy cannot completely replace antiviral chemotherapy, but the addition of immunotherapeutic drugs can improve the effectiveness of treatment. New and promising antiherpetic chemotherapy drugs are cidofovir and brivudine. These drugs are more effective than acyclovir and ganciclovir, but are less tolerated that limits their widespread clinical use.

DEVELOPMENTAL ABNORMALITIES OF THE KIDNEYS

Pogodaeva E.-the 2nd year student
Supervisors: Can. Med. Sc. Seliverstov S.S., Katina O.I.

Kidneys are paired parenchymal bean-shaped organs, weighing 120-200 g that produce and excrete urine. The kidneys are located in the lumbar region on both sides of the spinal column, on the inner surface of the posterior abdominal wall retroperitoneal.

Aplasia or agenesia of the kidneys are rare congenital anomalies. The cause of aplasia is hereditary predisposition. The cause of renal agenesis is the absence or stop of the development of the Wolf duct in half of the urinary tract, the metanephrosal channel does not develop to metanephrogenic blastema. The frequency of the anomaly is 1: 1200 people (0.083%). For children with this pathology facial dysmorphia are characteristic - protruding frontal bumps, deformed low-lying ears, a wide flat nose, micrognathia, hypertelorism of the eyes, epicanthus, puffiness of the face - Potter's face.

The cause of complete and incomplete doubling of the kidneys is a genetic failure, as a result of violation of differentiation of the rudiments of the organ in utero, as well as the impact of harmful factors that provoke damage to genes in one of the parents. Therefore, most often the pathology is found in children and women, the frequency of its occurrence is 1: 150 newborns (10.4%).

The additional (third) kidney is a rare anomaly of intrauterine development in the fetus, which is unilateral. The cause of the anomaly is the failure of the natural formation of internal organs in the fetus, due to various external and internal factors. Percentage of detection of such pathology increases every year. It is 20% of the total number of congenital malformations of the kidneys.

Hypoplasia of the kidney is a congenital disease characterized by abnormally small size of the organ, with all the preservation of the anatomical structure. Hypoplasia of the kidney appears due to insufficient development of renal tissue, as well as impaired blood supply to the fetus. The incidence is 1: 500 adults and 1:577 children (0.09-0.16%).

Kidney dystopia is a congenital disorder of the topography of the kidney in which the organ may be located low or displaced to the pelvic(21.3%), lumbar(66.8%), sacroiliac (11.9%) and thoracic regions. The incidence of pathology is 2.8% of all abnormal cases. This form of the disease is detected in 1: 1000 newborns. Dystopia of the right kidney(58.3%) is more common than the left one (33.1%). Bilateral dystopia is observed in 8.4% of cases.

LOVE IN TERMS OF PHYSIOLOGY AND BIOCHEMISTRY. HORMONES AND NEUROTRANSMITTERS AS COMPONENTS OF ATTRACTION, PASSION, AFFECTION, LOVE

Pogodaeva E. - the 2nd year student
Supervisors: Doc. Biol. Sc. Batalova T.A., Feoktistova N. A., Katina O.I.

The saying that there is chemistry between people in love, most likely, appeared even before scientists have actually discovered the biochemical reactions of love, in the power of which we are all. For a better understanding of the dynamics of relations in a couple, it is important to understand that the feelings that ensure its development are genetically programmed and are caused by biochemical processes occurring both in our brain and in the body as a whole, thanks to which we do not notice the shortcomings of the partner. We feel our wholeness and fullness of life only in the presence of the beloved person and emotionally dependent on him. Hormones and neurotransmitters play a huge role in this.

The fact that hormones and neurotransmitters are responsible for the state of love proves the fact that in hypopituitarism-a disease in which the pituitary gland does not produce enough "command" hormones, including sex, a person is not able to love. However, to consider love to be only the chemical reactions would be too wrong. No doubt it appears under the influence of hormones, but it develops only under the influence of a person's personality.

Basic phases of love:

1. «Phase of attraction». During this period, the decisive importance for the choice of a partner, according to the researchers, is for special smells, or pheromones, the production of which is activated by the limbic system of the brain. Attraction, craving, attraction to a potential object of love is primarily in charge of male and female sex hormones: androgens (testosterone) and estrogens (estradiol).

2. «Infatuation phase or period of infatuation». According to different scientists, it lasts from a year to three years. It characterizes by a feeling of happiness (if all is well) or strong feelings (if something does not go well), all attention is focused on the object, and the person is absorbed in dreams of new meetings with him. This condition is accompanied by the presence in the blood of the lover, literally a cocktail of neurotransmitters: adrenaline, norepinephrine, dopamine, serotonin and phenylethylamine (FEA). In the initial "phase of attraction" these substances also participate, but only in the second "phase of attraction" they begin to prevail and dominate.

3. «Attachment phase». The hormones oxytocin and vasopressin support the sense of unity, calm joy, stability and peace that everyone feels next to a potentially long-term partner.

4. «The phase of True love». It comes usually in 18-30 months. Hormones are back to normal, people see each other as they are. It is accompanied by a decrease of the endorphins level in the blood to a level when a person is ready to fall in love again because of the lack of such feelings and emotions as euphoria, inspiration, pleasure.

MOREDN IDEAS ABOUT STEM CELLS

Tsvetkova J. — the 2nd year student
Supervisors: Can. Med. Sc. D. A. Semenov, O.I.Katina

To renew the cellular composition of the damaged organ without surgical intervention, to solve the most difficult tasks that were previously possible only by an organ transplantation - these tasks are solved today with the help of stem cells. For patients - it is a chance to get a new life. The important thing is that stem cell technology is available for almost every patient and gives a truly amazing result, expanding the possibilities of transplantation. Stem cells are able to turn into tissue cells of various organs, depending on the environment. One stem cell produces many active functional descendants. Studies of genetic modifications of stem cells are carried out all over the world. The methods of their growth are intensively studied. When an egg is fertilized, one zygote (fertilized cell) divides and gives rise to cells whose main task is to transmit genetic information to the next generations of cells. These cells do not yet have their specialization, the mechanisms of such specialization do not work yet and that is why such embryonic stem cells give an opportunity and make it possible to use them to create any organs.

The secret of stem cells is that, being immature cells, they can turn into a cell of any organ. They contain not only the genetic information, but what is the most important, the scheme of development of the organism and its sequence. As soon as the stem cells of the body receive a signal of tissue or any organ damage, they are sent to the lesion focus. There they turn into those cells of human tissues or organs that need protection. Stem cells can transform and become any cells: liver, nerve, smooth muscle, mucous. This stimulation of the body leads to the fact that it begins to regenerate actively its own tissues and organs.

The body cannot repair lost stem cells on its own. The development in the field of modern medicine today allows to insert the stem cells into the body and, most importantly, to send them in the right direction. Thus, for the first time there is a possibility of treatment of such dangerous diseases as cirrhosis, diabetes, and stroke. In the next decade, this area of medical science can become the basis for the treatment of the most common diseases of the cardiovascular and central nervous system, musculoskeletal system. As they get older, the number of undifferentiated stem cells steadily decreases. If a fetus (embryo) has 1 stem cell for every 10 thousand differentiated ones, then by the age of 60 the ratio changes many times, falling till 1 to 8 million. It is for this reason that damaged tissues regenerate much more slowly in elderly patients. The best source of stem cells is the blood got from the umbilical cord immediately after the birth of a child. These cells also exist in the placenta and embryonic tissues. The source of stem cells of an adult is the red bone marrow. Stromal elements are obtained by puncture. In a special laboratory the colonies, which are then transplanted to the patient, are grown from them. Getting into the body they migrate to the lesion focus, where they replace the dead highly differentiated elements.

PROGERIA, GATCHINSON-GUILDFORDS SYNDROME

Kikot A. — the 2nd year student
Supervisors: Can. Med. Sc. D. A. Semenov, Katina O.I.

Progeria (dr. Greek προσ- - over, γέρων - old man) — is one of the rarest genetic defects. With progeria, changes in the skin and internal organs occur that are caused by premature aging of the body. They classify children's progeria (Gatchinsons syndrome (Hutchinson) - Guildford) and adult progeria (Werners syndrome).

Children affected by this disease look like ninety years old persons. Progeria is caused by a defect in the human genetic code. This disease has unavoidable and detrimental effects on humans. Most of those born with this disease die by the age of 13, because the aging process is accelerated in their body. Progeria is extremely rare. This disease is seen only in 48 people worldwide, five of whom are relatives. Therefore, it is also considered to be hereditary.

The cause of childhood progeria is a mutation of the LMNA gene encoding lamin A. Lamines are the proteins from which a special layer of the membrane of the cell nucleus is built. In most cases, progeria occurs sporadically, in several families it is registered with siblings, including from consanguineous marriages, which indicates the possibility of an autosomal recessive type of inheritance. In the skin cells of patients, violations of DNA repair and cloning

of fibroblasts, as well as atrophic changes in the epidermis and dermis, the disappearance of subcutaneous tissue were found.

MEDICAL AND BIOLOGICAL FEATURES OF INJURIES AMONG CHILDREN IN THE AMUR REGION

Dudkina. K., Postnikova E. — the 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

According to the World Health Organization (WHO), in the world more than 100 children die every hour due to unintentional injury or accident that could have been prevented. Child injuries in the Amur region are gaining momentum. Dozens of children are injured daily. Most often they occur only because the children have been out of adults care at that moment.

Three peaks of childhood injuries are usually recorded during the year - these are January, May and August - September. During this period, injuries in children occur 4 times more often. The ratio of the frequency of injuries in boys and girls is 3: 1.

Most often, children with domestic (38%) and street injuries (37%) are admitted, less often - with school injuries (11%) or injured gaining during organized sports (7%). At the same time, transport injuries account for only 1.2% of the total number of injuries. But most often they lead to mortality and disability in children and adolescents due to the severity of the injuries received.

Among the total number of injuries in children, superficial injuries (40%), dislocations and sprains of joints (15%), and wounds (11%) prevailed. Fractures of bones of the upper extremity accounted for 13.3%, fractures of bones of the lower extremities - 5.4%, fractures of the spine and bones of the trunk - 1.4%, thermal and chemical burns - 2.1%.

Prevention of childhood injuries consists, first of all, of preventing children from being left on the street and near water bodies, organizing useful forms of leisure, and physical education and mass work. It is necessary to ensure the proper functioning of structures intended for childrens games and sports, to keep in a proper condition rooms for children, places for walks and classes. It is also obligatory to teach children the rules of safe behavior in different places and situations.

COLOR VISION RESTORATION IN CHILDREN

Yaroslavtseva D.- the 2nd year student
Supervisors: Pavlova A.E., Katina O.I.

The question of the development of color perception in children remains far from a final solution.

A number of scientists believe that newborn children have a color perception and distinguish colors. Others consider that it develops during the first or second half of the 1st year of life. The third suppose it to be in pre-school and even preschool age.

These disagreements may be attributed to differences in the methodology and subject of the study. Researchers used various methods (selection, fixation, name, guessing and comparison, threshold measurements and conditioned reflexes) that are far from equally

accessible to children of different ages. Moreover, the study was often carried out on materials that differ in their physical characteristics.

Thus, an indicative reaction (cessation of sucking of a pacifier) during light stimulation with red, green and blue color of the same brightness is observed in newborns developed for the same color stimuli, observed from the 55-60th day of life.

Differentiation of colors during the development of a sucking food conditioned reflex is noted at the end of the 3rd and the beginning of the 4th month of life. The most recent differentiation of one color from another was found during the development of a grabbing food conditioned reflex, namely, at the 5-6th and even 8-9th months of life.

With age, deep vision improves. The acuity of deep vision was studied at the age of 6 to 17 years. The most intense increase in visual acuity is observed up to 9 years. At 16-17 years old, visual acuity is basically the same as in adults.

The ability to stereoscopic perception of other images is formed gradually from childhood and reaches its maximum development by 17-22 years. This is reflected in the natural increase in stereoscopic space. Then, starting from the age of 40, the area of stereoscopic perception decreases.

MODERN ASPECTS OF PRION DISEASES

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

Prion diseases (PD) are a group of neurodegenerative diseases characterized by progressive brain damage and death.

PD are not registered in Russia. In the world, the total annual frequency of the sporadic form of Creutzfeldt-Jakob disease (CJD) in different regions of the world is almost the same and does not exceed 1.5-2 cases per 1 million of population. Gertsmann-Straussler-Scheinkers Syndrome (GSSS) is recorded with a frequency of 1 case per 1 million of population. Only about 100 cases of fatal insomnia are described. Kuru occurs in only one small population.

PD have a long incubation period lasting for years. But it quickly progresses after the onset of clinical symptoms. All mammalian PD is caused by PrP. Its form with a normal tertiary structure is designated as PrPC (from English: common - usual). The pathological form of the protein, which determines its infectivity, is called PrPSc (from the English scrapie - scratching of sheep (scrapie). Prions are infectious agents whose reproduction occurs without the participation of nucleic acids. The infectious PrPSc isoform converts the normal PrPC protein into an infectious isoform. The form of prion protein is stable to external influences. It accumulates in neurons, causing their atrophy, sclerosis, and death. The clinical manifestations of PD are variable and depend on the clinical form of the disease. Often they differ between each other by the duration of the incubation period, manifesting symptoms and the patient's life expectancy after the onset of symptoms. Some symptoms that occur in many clinical forms can be distinguished: progressive dementia, accompanied by behavioral changes, disorders of higher mental functions, myoclonus, pyramidal disorders, the development of tremor and ataxia.

There is currently no medications therapy for PD. However, tests are being conducted with medications that can slow down the process of neurodegeneration. As shown by experiments on mice, the effect of such agents is most effective in the preclinical stage of the disease. However, clinical manifestations usually occur just at the peak of the spread of PrPSc in brain neurons. Therefore, preclinical diagnostics is important. This is a combination of methods of magnetic resonance imaging, cytological analysis of cerebrospinal fluid, electronic encephalography and quaking-induced conversion technology. The latter method is capable of detecting ultra-low concentrations of PrPSc in cerebrospinal fluid.

There are modern components with anti-prion activity: CompB, a series of components IND, Anle138b. CompB and a series of IND components maintain low brain infection for a long time, prolonging the incubation period in mice by an average of 68.6 ± 5.9 days. Anle138b is more effective for the therapy, as it is active against many strains of PD and has a longer half-life in the brain compared to CompB and a series of IND components.

Thus, a better approach to treating PD would be to improve the diagnosis and screening of a genetic predisposition for the beginning of early therapy in the incubation period. As for the therapeutic targets of PD in the creation of pharmaceuticals, these are primarily: inhibition of PrPSc expression, increased degradation of PrPSc, inhibition of the interaction of PrPc-PrPSc and inhibition of PrPSc oligomer.

THE CONSEQUENCES OF THE FERRY CRASH IN IRAQ, MARCH 2019

Tsvetkova J. the 2nd year student
Supervisors: Can. Biol. Sc. L. A. Guba, Katina O.I.

The incident, which took a dozens of lives of people who came to celebrate Nouruz, took place in Iraq on March 21, 2019. According to preliminary data, about 200 people were on the ferry that crashed. Initial data show that the main reason of why the ferry turned over was the excess of the permitted number of passengers. The second reason was the increase of water levels in the Tigris River due to the fact that the locks were opened in the Mosul dam. The victims of the crash were 93 people. However, it is not the final number. As several dozen people are considering still missing, experts do not except that they also became the victims of the incident. The ferry was hired specifically for the celebration of Nouruz. This holiday marks the beginning of the year and the beginning of the vernal equinox. The tragedy itself happened due to the fact that the ship was overloaded. It is known that the ferry can accommodate no more than 75 passengers, while at the time of the incident there were about 200 people on board. The head of the civil defense Department of the city Husama Khalii noticed that rescuers began to evacuate and search for victims a few minutes after the crash. In a short period of time, they managed to find and rescue 12 people from the Tigris River where the disaster took place. Among the officially announced victims the majority are children and women. They became hostages of a situation as they were not able to swim and to keep on water for a long time. Speaking about the victims that were found by rescuers and were given the first aid, they were 55 residents of Monsul.

Among them were 19 children whose lives, after examination by doctors, were not in danger. Iraqi media reported about persons who were apprehended and they considered responsible for the tragedy. Among the detainees was the owner of the ferry. He is suspected of criminal negligence - the admission on board of such a number of passengers for the transportation of which the ferry is not designed. 9 employees of the company which was engaged in ferry transportation were also detained.

TYPE II DIABETES

Kikot A. — the 2nd year student
Supervisors: Feoktistova N.A., Katina O.I.

Diabetes mellitus is a group of endocrine diseases associated with impaired glucose uptake and developing due to absolute or relative (impaired interaction with target cells) insulin hormone deficiency, resulting in hyperglycemia - a persistent increase in blood glucose. The disease is characterized by a chronic course, as well as a violation of all types of metabolism: carbohydrate, fat, protein, mineral and water-salt.

Type 2 diabetes (the old name is non-insulin-dependent diabetes) is characterized by disorders. In this type of diabetes, insulin is produced in normal or even in increased quantities, but the mechanism of interaction of insulin with the body's cells (insulin resistance) is disrupted.

Diabetes mellitus is manifested by an increase in blood glucose, a decrease in the ability of tissues to capture and utilize glucose, and an increase in the mobilization of alternative energy sources - amino acids and free fatty acids.

Russian standards: diagnostic benchmarks for diabetes, disorders of glucose tolerance (NTG), impaired fasting glycemia (IGN).

THE CONSEQUENCES OF THE CHULMAN RIVER POLLUTION IN THE REPUBLIC (SAHA) OF YAKUTIA IN 2019

Kikot A. — the 2nd year student
Supervisors: Can. Biol. Sc. Guba L. A., Katina O.I.

On the fact of ice pollution in the area of the Chulman village in Neryungrin, the State Environmental Supervision Committee of the Ministry of Ecology of the RS (I) conducted a survey of the water area of the Chulman River on May 12, 2019. Throughout the site there were ice floes covered with small particles of black color, presumably it was a coal dust. State inspectors took samples of natural environments for laboratory research.

This is not the first case of contamination of a water facility. Thus, in January of this year, the pollution of the Chulman River was recorded below the mouth of the Upper Neryungri River. The pollution occurred as a result of Yakutugol's economic activities in coal mining and enrichment. The company has been brought to administrative responsibility under part 4 of Art. 8.13 RF COAP.

On March 4, as part of environmental monitoring, a raid was carried out to take samples of natural environments in the area of activity of Yakutugol. According to the results of laboratory studies, the quality of snow cover has deteriorated in the area of influence of the Yakutugol

processing plant relative to background indicators. The excess from the background value of the suspended substances was from 21 to 294 times.

Due to the fact that the plant "Neryungrinskaya" processing of Yakutugol is one of the objects subjected to the federal state environmental supervision, the materials have been transferred to the Federal Service for Supervision of Natural Resource Usage for further response.

On April 24, pollution was recorded in the Upper Neryungri Region during a monitoring and raid in the area of Yakutugol.

On April 25 and 27, during the monitoring and raid activities, a survey was conducted on the Chulman River area in the region of the mouth of the River Dezhnevka and the mouth of the Upper Neryungri River. During the survey samples of water in the Chulman River and the River Dezhnevka were taken. They were sent for examination to establish the extent of pollution.

COMPARATIVE EFFECTIVENESS OF PHYTOADAPTOGENS UNDER ULTRAVIOLET IRRADIATION

Gubershtro Ya., Kolesov B. — the 6th year students
Chashchina M. - the 5th year student
Supervisors: Doc. Biol. Sc. Simionova N. V., .Katina O. I.

Modern conditions of human habitat have dramatically increased the level of radical-forming processes in the body, so there is a need to use antioxidants for preventive and therapeutic purposes. The actual task of modern medical science is the search for effective and economic means of herbal plants that have such properties and grow in the Far East.

The experiment was carried out on 50 white male mongrel rats weighing 180-220 g for 21 days. The animals were divided into 5 groups, each with 10 rats: 1 group-intact rats kept in standard vivarium conditions; 2 group — the control one, animals were exposed to UFOs for 3 minutes daily; 3, 4 and 5 groups - experimental, animals before irradiation, respectively, were administered tinctures of ginseng, lemongrass, aralia orally at a dose of 1 ml/kg. Slaughter of animals by decapitation was carried out on 22 days. The intensity of POL processes was assessed by examining the content of lipid hydroperoxides (HP), diene conjugates (DC), malondialdehyde (MDA) and components of AOC — ceruloplasmin, vitamin E in the blood of animals by conventional methods. Statistical processing of the results was carried out using the Student's criterion (t) using the program Statisticav. 6. 1.

The results of the study showed that exposure to ultraviolet rays on rats was accompanied by activation of POL processes and accumulation of peroxidation products in the blood of control animals: an increase in the content of HP in 52.1% compared to the same indicator in the group of intact rats, DC — in 58.4%, MDA — in 45.8%. In turn, the introduction of ginseng tincture in conditions of oxidative stress induced by exposure to UFOs was accompanied by a significant decrease in the content of radical products in comparison with the indicators in the control group: the content of HP decreased in 27.6%, DC — in 17.6%, MDA — in 28.6%. The use of lemongrass tincture in the experiment contributed to a decrease in the level of GP in 31.8%, DC- in 26.6%, MDA- in 27.2% in comparison with the same indicator in the control

group. The content of ceruloplasmin in the blood of control rats in comparison with intact animals decreased in 27.7%, vitamin E- in 20.8%. The use of ginseng tincture for the correction of peroxidation processes under the influence of ultraviolet rays contributed to an increase in the activity of EPA in the blood of experimental animals: the content of ceruloplasmin increased in 34% compared to the same indicator in the group of control rats, the level of vitamin E — in 12%. In turn, the study of the level of components of the EPA in the conditions of correction by the introduction of lemongrass tincture allowed to state an increase in the activity of ceruloplasmin in 33.6%, vitamin E- in 24.8%.

Thus, the effectiveness of phytoadaptogens in oxidative stress under the influence of ultraviolet rays was experimentally confirmed.

BRUCELLOSIS

Pogodaeva E.- the 2nd year student
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

Brucellosis - Bruces disease, Bangs disease, melitococcosis, undulating fever, Gibraltar fever — a systemic zoonotic(transmitted from animals to humans) infectious disease characterized by damage to the musculoskeletal system, peripheral nervous, sexual systems, transmitted by alimentary, contact and air, and has a tendency to chronic and frequent relapses. Code of the disease in ICD10-A23.

The causative agents of brucellosis are aerobic and microaerophilic fixed gram-negative bacteria of the genus Brucella, family Brucellaceae. Pathogenic to humans are the types of bacteria: 1.Br.melitensis (causes brucellosis in goats); 2-Br. abortusbovis (in cattle); 3-Br. abortussuis (in pigs); 4-Br.canis (in dogs) pathogenicity in humans is rare; 5-Br.ovis (in sheep) and 6-Br.neotomae (in rodents) pathogenicity is not proven.

Pathogenesis (disease development):

Stage 1(lymphogenic) - after penetration of infection into the body through microtrauma of the skin or mucous membranes, Brucella enter the lymphatic system and with the lymph flow spread to various lymph nodes. In places of infection regional lymph nodes do not immediately increase. Lymphadenopathy can be formed a little later and generalized, i.e. in a mass lesion of the body with brucella. The duration of the stage depends on the state of reactivity of the human immune system, as well as the type and activity of the bacteria. Clinical manifestations of the disease in this period are absent, but the immune system increases the number of antibodies to the pathogen in the body.

Stage 2 (hematogenous mole) - the infection penetrates into the circulatory system and releases toxins that in their turn lead to body intoxication symptoms. There are violations in the nervous system.

Stage 3 (acute brucellosis) - brucella with blood flow spread through the body and form secondary foci of infection in various organs and systems. Granulomas appear on the affected organs and tissues with the disease development. Some types of Brucella contribute to the appearance of abscesses on the organs, for example — Brucellasuis.

Stage 4 (exo-focal inseminations and increase in allergic status) - it is characterized by the formation of new foci of infection and the development of increased allergenicity of the body to adverse factors. Hypersensitivity of the body persists for a long time, even after cupping the infection. This is one of the leading pathogenic signs of brucellosis. In fact, this stage is a chronic period of the disease with a long course (up to 3 years or more) and periodic relapses.

Stage 5 (residual effects) - it is characterized by the presence of irreversible consequences in the body even after complete cupping of the infection. Among such changes the destruction and deformation of bones, joints, allergies, disorders of the nervous system may be identified. The most severe is brucellosis caused by Brucellamelitensis, which is usually transmitted by cattle. After the disease human has relatively not lasting immunity — for 3-5 years. After that re-infection may occur.

THE ROLE OF MELATONIN AND ITS DEFICIENCY IN THE BODY

Tsvetkova J. — the 2nd year student
Supervisors: N. A. Feoktistova, O.I.Katina

When a person sleeps, the melatonin restores organs, cells and the body. The organism comes in tone, rejuvenates and blooms. Thus the immunity increases and resistance to various chronic diseases increases in several times. Melatonin is a sleep hormone. And it means that it is responsible for regulating the most important processes in a person's full life during sleep and wakefulness. It is produced by the pineal gland-the epiphysis. And it performs the following vitally important functions: regulates the rhythm and cyclicality of sleep and wakefulness; prevents stress; significantly reduces the aging process; products containing this hormone strengthen the immune system; drugs containing melatonin act as regulators of blood pressure; epiphysis hormone controls the gastrointestinal tract; brain cells containing melatonin live much longer and provide the activity of the central nervous system; when the hormone is produced in sufficient quantities, the body can counteract the formation of cancer; prevents obesity; reduces headaches and toothaches; regulates body temperature; increases life expectancy; it has the property of reducing muscle pain; influences on affects reproductive function. If there is insufficient amount of epiphysis hormone in human blood, then: the first signs of aging will appear in 17 years; the accumulation of harmful free radicals will increase 5 times; in six months a person will gain from 5 to 10 kg of excess weight; menopause in womens life can occur in 30 years; the formation of breast cancer among the female population will increase to 80%. The melatonin deficiency leads first of all to a sleep disorder.

If the body produces insufficient amounts of melatonin, the duration of sleep reduces and there is no good sleep. As a result, a person feels broken, irritability increases, concentration decreases. Regular sleep disorders and insomnia lead such patients to somnologists-specialists in the field of sleep. Following the rules of daily regime of sleep in the absence of sunlight and artificial lighting will help to start regular production of melatonin in the body in sufficient quantities. That will be the key to well-being, youth, health and longevity for any person. And it prevents the development of many diseases.

CONSEQUENCES OF ACTION OF FANI CYCLONE ON THE COAST IN INDIA

Grineva T. — the 2nd year student
Supervisors: Can. Biol. Sc. Guba L. A., Katina O.I.

Tropical cyclones are intense vortices of a synoptic and subsynoptic scale originating in a tropical atmosphere. Being one of the most important elements of atmospheric circulation in tropical latitudes, they are an extremely dangerous natural disaster.

Tropical cyclones on the path of movement cause enormous material damage and take many lives.

Damage to material assets can be divided into direct and indirect. Direct damage - is one that occurs directly during the storm (destruction of buildings, fires, loss of harvest, etc.). Indirect damage occurs for a long time after the passage of typhoons and hurricanes over islands and continents. For example, the absence of a crop for several years in those fields from which the surface layer of soil was carried away, and a production reduce in destroyed plants and factories. The amount of indirect damage caused by a tropical cyclone may be several times the amount of direct damage. Long-term statistics of tropical cyclones observation revealed some regularities that relate the size of the damage caused to the physical characteristics of tropical cyclones. This allows to make a rough idea of the magnitude of the impending disaster.

ECHINOCOCCOSIS

Krivutsa V.– the 3rd year student
Supervisors: Can. Med. Sc. Menschikova N.V., Katina O.I.

Echinococcosis (from the Greek. Echinos - hedgehog, kokkos - grain) - helminthiasis from the group of cestodoses, characterized by the formation of echinococcal cysts in various organs. It is caused - a) Echinococcus granulosus (more often) - the hydatidose form of echinococcosis; b) Echinococcus multilocularis - the alveolar form of echinococcosis (alveococcosis). With hydatidosis echinococcosis the cysts (or one cyst) appear in the organs. They are different in size (from the size of a nut to the size of adults head). The cysts have a whitish layered chitinous membrane and are filled with a clear, colorless liquid. From the inner germinative layer of the bladder membrane, the daughter cysts with scolexes arise. These daughter cysts fill the chamber of the maternal cyst (single chamber echinococcus). The organ tissue, where the single-chamber echinococcus develops, is exposed to atrophy. The connective tissue grows at the border with echinococcus forming a capsule around the bladder.

In the areas of the capsule adjacent directly to the chitinous membrane, giant cells of foreign bodies appear. They are the phagocytic elements of this membrane. More often, echinococcal cyst is found in the liver, lungs, kidneys, less often in other organs. With alveococcosis, the oncospheres give the onset to the development of several cysts simultaneously, and foci of necrosis appear around them. In alveococcosis cysts the outgrowths of the cytoplasm are formed, and the growth of the cysts occurs by budding outward, and not inside the mother's cyst, as is the case with single-chamber echinococcus. As a result, with alveococcosis, more and more new cysts penetrating the tissue are formed. That leads to tissue

destruction. Therefore, alveococcus is also called multi-chamber echinococcus. Therefore, the growth of alveococcus has an infiltrating nature and is similar to the growth of a malignant neoplasm.

Toxic substances released from the vesicles cause necrosis and a productive reaction in the surrounding tissues. In the liver, it occupies a whole lobe, is very dense (board density), in the section it has a porous appearance with layers of dense connective tissue. In the center of the node, a decay cavity is sometimes formed. Alveococcus is disposed to hematogenous and lymphogenous metastasis. Hematogenous metastases of alveococcus with its primary localization in the liver appear in the lungs, then in the organs of a systemic circulation - the kidneys, brain, heart, etc. In this regard, clinically alveococcus acts as a malignant tumor.

Complications. With echinococcosis, complications are more often associated with the cyst growth in the liver or alveococcus metastases. The development of amyloidosis is possible.

MALFORMATION OF THE SPINAL CORD

Ree Tae Sou — the 2nd year student
Supervisors: Can. Med. Sc. Pavlova A. E., Katina O.I.

Diastematomyelia — is a separation of the spinal cord in length into two parts with osseous, cartilaginous or fibrous septum. Nevertheless, diastematomyelia may be accompanied with dermal manifestations, the abnormality in condition of locomotor system and neurological disorders. Changes in locomotor system may occur in childhood. It may develop in deformation of feet. There is the weakness of one or two legs, asymmetry of lower limbs muscles, hypotrophy of certain muscles or group of muscles, legs muscles and pelvic girdle debility. Quite often from the early age children have scoliosis and other forms of spine deformation.

Amielia — is a complete absence of the spine cord, but dura mater and cerebrospinal ganglia are observed. In the area of the spinal cord a thin fibrous cord may occur.

Diplomyelia — is the doubling of the spinal cord on the level of cervical or lumbar enlargement, less often — the doubling of the whole spinal cord.

Hydromyelia — is the edema of the spinal cord. Spinal canal is lined with ependyma and filled with cerebrospinal fluid (CSF). The pathology often manifests on cervicothoracic level, usually is combined with hydrocephalus and stenosis of apertures of the fourth ventricle of the brain, and may be the manifestation of syringomyelia developed in accordance with the hydrodynamic theory of Gardner.

RUNNING FOUL OF TWO SHIPS IN BUDAPEST IN MAY 2019

Lukasevich O., Meshalkina M.- the 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

In the evening of May 29 on the Danube River in the center of Budapest (Hungary) the excursion motorship Hableany foundered. The incident was about 10 p.m. local time. There were 35 people on board including 33 passengers aged 40 to 50 years and 2 crew members. 7 people died and 19 were missing. The ship overturned and foundered after the running foul with another

passenger ship Viking Iddis (Viking River Cruises) that was going downstream of the Margate Bridge.

The owner of the ship was the Hungarian company Panorama Deck HajozassiTagsasad. The Hableany was reconstructed from a production transport vessel to an excursion one. The large number of victims was explained by the fact that at the time of the incident there was a pouring rain in Budapest and all the passengers were on the lower deck in the closed cabin, from where most of them could not get out.

MEDICAL AND BIOLOGICAL CONSEQUENCES OF FLOODING IN THE BELOGORSK DISTRICT

Bugera E., Nerukh N. — the 2nd year students
Supervisors: Can. Med. Sc. Guba L.A., Katina O.I.

Flooding — is a significant flood of the land area as a result of rising water levels in water bodies that damages the economy, settlements or the natural environment.

The flood in the town of Belogorsk, formed as a result of precipitation in the upper reaches of the Tom River, reached its maximum values in the city district on July 31 and amounted to 444 cm, a record for the last decade. Previously the water got the level of 430 cm in July 2013.

All the summer cottages of Mezdurechie, some of the houses near the Tom River along the streets of Naberezhnaya, Tolstoy, Beregovaya, Polevoy, Ozernaya were under the water. On Staritsa, the water began to enter houses from the side of streets of Relochnaya and Snegovaya. Approach to Staritsa was washed away.

In the Amur region the emergency regime due to the high water was from July 25. As a result of the emergency situations 69 settlements were flooded in 20 municipalities of the region. During the flood 879 residential buildings and 4,669 people, including 1,041 children, fell into the flood zone. In addition, 3171 household areas, 31 social facilities, six communal and engineering infrastructure facilities were flooded. 13 bridges, 82 structures, and 159 sections of roads with a length of more than 500 km were damaged. Crops on an area of about 250 thousand hectares were affected.

Since flood control is not always possible, early evacuation of people and property has become the main method of reducing flood damage in Belogorsk.

EMBRIOGENESIS. FORMATION OF AXIAL ORGANS

Dementieva D. — the 2nd year student
Supervisors: Can. Med. Sc. Seliverstov S.S., Katina O.I.

Embryogenesis is a physiological process during which the formation and development of an embryo takes place. Embryogenesis is the initial stage of ontogenesis of living things. The process begins with the fertilization of the egg that forms a zygote. This is the only diploid cell of a new living organism.

Human embryogenesis can be divided into three periods:

1. Crushing: zygote is sequentially divided into cells, without a general increase in volume and mass.

2. Gastrulation: a single-layer embryo transforms into a multilayer one.

3. Organogenesis and histogenesis: during this period the axial organs are formed making the basis of the structure.

The neural tube is formed from the ectoderm. The cells form the neural plate. Somites are an accumulation of mesoderm cells. The central part differentiates into a myotome, from which striated muscles are formed. Somites adjacent to the chord form a sclerot, from which the skeleton and skeleton of the limbs are formed. The upper part is called the dermatome, it forms the basis of the skin. Splanchnotomes split into two leaves. The space between the parietal and visceral leaves is a celoma. Nephrotomes bind somites and splanchotomas, they participate in the formation of renal tubules.

Then the extra-embryonic organs are formed. The yolk sac consists of an extra-embryonic endoderm and an extra-embryonic mesoderm, from which primary germ cells are formed. The amnion is formed from the amniotic vesicle, participates in the development of the oral cavity, respiratory and digestive organs.

MEDICAL AND BIOLOGICAL CONSEQUENCES OF NUCLEAR EXPLOSIONS IN SAKHA (YAKUTIA)

Bazheeva Ya., Dementieva D.— the 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

Few people know that there are huge radioactive burial grounds near the Yakut cities - the consequences of nuclear tests with the release of geological rocks having an increased radiation background by a factor of a thousand. From 1974 to 1987, 12 underground nuclear explosions were carried out in Yakutia. Two of them were accidental with the release of radiation into the atmosphere - “Kraton-3 ″ and Crystal. The consequences of those accidents have not been eliminated so far.

Since nuclear explosions were carried out with gross violations, soil investigation after the accident showed that the forest soil contained 20 times more plutonium than Nagasaki soil. Rehabilitation of the territories was unsuccessful. After checking by members of the Public Environmental Monitoring, it turned out that the implementation of rehabilitation remedial work is not enough to fully ensure radiation safety.

A number of studies have shown that liquidators and residents are at increased risk of various diseases, such as cataracts, cardiovascular diseases, and decreased immunity. In Yakutia, the issue of cancer is acute. As statistics show, 1,315 people died from neoplasms in the republic in 2017. 839 of them are the city dwellers, i.e. almost twice as many villagers.

At the moment, according to the Minister of Nature Protection of Yakutia, the radiation situation at the facility does not require additional intervention in order to further reduce radiation doses. But now periodic monitoring is required to timely detect possible additional environmental pollution.

GUNTHER'S DISEASE. CONGENITAL ERYTHROPOIETIC PORPHYRIA

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

Gunther's disease (congenital erythropoietic porphyria) is a rare hereditary disease named after the doctor who described it, German Hanz Gunther. The disease is characterized by an increase of substance in the body cells content - porphyrin. Porphyrin is a pigment substance that is part of hemoglobin, which gives the blood a characteristic red color. In 1990, it was found that the development of congenital erythropoietic porphyria is associated with a defect in the enzyme uroporphyrinogen III synthase. Since the disease is congenital, its first signs can be detected in a child at an early age, most often in the first year of life. The disease is popularly known as "vampire disease" due to its specific appearance and photosensitivity.

The manifestations of Gunther's disease include: hypertrichosis (abundant hair growth on the face and body); increased pigmentation of the skin; deformation of cartilages, ears, nose and eyelids; photosensitivity, up to the occurrence of burns; erythrodontia (staining of teeth in brown or red); numerous erosions and ulcers on the skin; discharge (urine, feces, mucous discharge) is colored red; enlargement of the liver, spleen.

Due to the fact that the disease is an extremely rare pathology, there is no single approach to its diagnosis and treatment. The diagnosis can be made on the basis of patient complaints, as well as after analysis of blood serum, the result of which is aimed at determining the content of the porphyrin level.

Unfortunately, there is no single approach to the treatment of this disease. Quite often, children with Gunter's disease die in early childhood, before they reach puberty. If the disease proceeds in a mild form, there is a high probability that the first symptoms will appear at the age of 15-20 years. At present, modern medicine offers only one variant for the treatment of Gunther's disease - transplantation of donor bone marrow. However, this method is extremely complex, and there are great difficulties with donor selection. The transplant performed does not give a 100% guarantee of cure, and besides, it has not been possible to prove its effectiveness by experiment.

VICTIMS OF LIGHTNING STRIKES IN THE WORLD

Batsaeva V., Makhmudova A. 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

Lightning is a powerful discharge of electricity that usually forms during a thunderstorm, accompanied by thunder and manifests itself as a bright flash. The power of lightning reaches from 10 to 500 thousand amperes, and the voltage - from 10 million to 1 billion volts.

In recent years, the number of people killed by lightning has increased. Scientists investigate the causes and conditions of their occurrence, and develop tactics of behavior during a thunderstorm. However, lightning statistics still record a high degree of injury and death from electric discharges.

On June 4, 2017, at least 42 people were injured in a lightning strike at the Rock am Ring rock festival in Mendig in western Germany. Festival organizers reported that eight victims were

hospitalized. And this is not a unique case. At least 16 people were killed and dozens injured in a lightning strike on a church in Rwanda on March 12, 2018. According to Mena FN, referring to local authorities, a tragic incident occurred in the village of Nyaryugur in the south of the country. According to the publication, most of the dead died on the spot, another 140 people were taken to medical institutions. More recently, in the summer of this year, at least 35 people were killed, and another 18 were injured in lightning strikes in the Indian state of Orissa, according to the New Indian Express.

Lightning statistics show that thunderstorms most often occur in rural areas, where there are a large number of tall trees and houses. Fire from lightning usually occurs during a direct hit.

Lightning is one of the most destructive and terrifying natural phenomena that people faces everywhere. At present, the modern level of science and technology allows to create a truly functionally reliable and technical system of lightning protection.

DIABETES

Makhmudova A. — the 2nd year student
Supervisors: Can. Med. Sc. Tertychnaya L.G., Katina O.I.

Diabetes mellitus is one of the most serious problems, the scale of which continues to increase and affects people of all ages and all countries.

Insulin is synthesized in the β-cells of the pancreatic islets of Langerhans. As many secretory proteins, the hormone precursor (preproinsulin) contains a signal peptide that directs the peptide chain into the endoplasmic reticulum, where proinsulin is formed after cleavage of the signal peptide and closure of the disulfide ponticuli. The proinsulin enters the Golgi apparatus and is deposited in cell vesicles, β-granules. In these granules, by cleaving the C peptide, mature insulin is formed. It remains in the form of a zinc-containing hexamer until secretion

Insulin deficiency leads to deep disturbances in the intermediate metabolism that is observed in patients with diabetes mellitus.

A characteristic sign of the disease is an increase glucose concentration in blood from 5 mM / L (90 mg / dL) to 9 mM / L (160 mg / dL) and higher (hyperglycemia, elevated blood glucose). In the muscles and adipose tissue, the two most important glucose consumers, the processes of glucose uptake and utilization are disrupted as a result of the disappearance of glucose transporter proteins GLUT-4 from the membrane composition (their appearance in the membranes depends on insulin). Due to insulin deficiency, the liver also loses its ability to use blood glucose for glycogen synthesis and TAG. At the same time, due to an increase in the concentration of glucagon and cortisol in the blood, gluconeogenesis increases and proteolysis in the muscles rises. In diabetes mellitus, the insulin-glucagon index is reduced.

Diabetes mellitus takes the third place among the direct causes of death after cardiovascular and oncological diseases. Therefore, the solution of many issues related to the problem of this disease has been put on the level of state tasks in many countries.

THE PRINIPLES OF VACCINE PREVENTION DEVELOPMENT

Ivashchenko V., Umarova N. — 5th year students
Supervisors: Can. Med. Sc. Marunich N.A., Can.Med.Sc. Mateishin R.S., Katina O.I.

Infectious diseases accompany the humanity from the moment of its formation as a species. The widest spread of infectious diseases at all times led not only to the deaths of many millions of people, but was also the main reason for the short life span of a person. More than 6.5 thousand infectious diseases and syndromes are known to modern medicine. And at present, the number of infectious diseases prevails in the general structure of diseases.

An important feature of the human immune system is its ability to recognize foreign agents entering the body and to immunological memory. If the cells of the immune system meet any microbe, then this contact will remain in the “memory” of the immune system. And if the same microbe ever again enters our body, the immune response will be much more intense and faster than the primary one. This is due to the pre-formed "memory" and various chemicals produced by its cells that are activated by secondary contact.

It turned out that the effect of immunological memory can be achieved by introducing weakened microbes, related microbes, or their individual components into the body. This phenomenon has found application in medicine and is called vaccination. Drugs of attenuated microbes, related microbes or their individual components are called vaccines.

Immunoprophylaxis remains to be the most reliable, effective and affordable method of combating managed infections. At the same time, with insufficient vaccination coverage and a violation of the vaccination schedule, epidemic outbreaks occur, the epidemic process is supported, and diseases are spreading.

There is indisputable evidence that diseases reappear with a decrease in the number of vaccinees. Due to the unsatisfactory vaccination coverage in the 1990s, there were major outbreaks of disease:

- The diphtheria epidemic in the CIS countries, which was most developed in 1995, when the number of cases exceeded 50,000;
- More than 100,000 cases of measles (only during outbreaks) recorded in Central and Western Europe in 2002-2004.

In order to prevent or mitigate the course of infectious diseases, immunization issues should be constantly in the field of view of all medical workers serving the adult population.

As the immunization helps to prevent diseases, it provides significant, albeit non-measurable, cost savings in terms of labor productivity, ability to work and access to education, as well as lower costs for treating diseases.

International students, immigrants, and refugees are referred to a high-risk group of infections that may be prevented with vaccination.

Elderly people, most of whom have certain chronic diseases, as well as people of any age with chronic diseases, primarily the cardiovascular and respiratory systems, who suffer from diabetes mellitus, are at a high risk of complications and mortality from infectious diseases, especially from the flu. These people must be vaccinated against influenza, while annual

vaccination reduces the incidence in about 50%, the occurrence of complications - by 80%, mortality - by 90%.

The rapid development of tourism also affects the spread of infectious diseases. “Exotic” infections appear in regions where they have never been seen before.

MODERN INHALATION AGENTS FOR ANESTHESIA

Li Gen Min — the 3rd year student
Supervisors: Anokhina R.A., Prof. Borodin E.A., Katina O.I.

The results of many research carried out both in our country and abroad indicate that the use of noble gases for inhalation anesthesia seem to be very promising, as it has organo- and neuroprotective, and antistress properties, proven experimentally and clinically.

Xenon is an inert gas that mixing with oxygen has strong analgetic, anesthetic and muscle relax effects.

Modern inhaled anesthetics are much less toxic than their predecessors. And at the same time they are more effective and controllable.

Recently, the interest in xenon has been growing both in Russia and around the world. Lots of positive effects and lack of proven side effects suggest the widespread occurrence of xenon anesthesia at present and in the future.

HISTOPHYSIOLOGY OF THE RENAL FILTER IN NORMAL AND PATHOLOGICAL CONDITIONS

Pogodaeva E. - the 2nd year student
Supervisors: Kozlova V. S., Katina O.I.

The filtration barrier (glomerular filter) consists of three layers: the endothelium of the glomerular capillaries of the glomerulus, the three-layer basal membrane and the epithelium of the visceral layer of the glomerular capsule (podocytes), through which blood is filtered - the first phase of urination - filtration and primary urine is formed (150-180 l/day) that is collected in the capsule cavity.

The endothelium of the glomerular capillaries is thinned, has numerous fenisters (50-100 nm) located on the inner surface of the three-layer basal membrane and equipped with a special diaphragm. In some areas, the endothelium is suppressed, forming pores that occupy about 30% of the endothelial lining, covered with negatively charged glycoprotein molecules (glycocalyx), which contributes to the diffusion of all components of the blood plasma, except for the shaped elements (erythrocytes) and large molecules (most albumin proteins, some globulins, fibrinogen), to the basal membrane lying under the endothelium. Changes in the endothelium of the glomerular capillaries are diverse: swelling, vacuolation, necrobiosis, proliferation and desquamation. But the destructive-proliferative changes characteristic for glomerulonephritis (GN) prevail.

The basal membrane is the main part of the renal filter. Its formation involves the podocytes, endothelium and mesangial cells, having a thickness of 250-400 nm and thick three-layer structure. 2 layers of this structure (external and internal) are electronproton, less dense,

and contain mucosubstances. They are essentially the glycocalyx of podocytes and endothelium. Between them there is the electron dense middle layer that contains microfibrillar mesh with a cell diameter of about 7 nm. It is composed of protein filaments such as collagen, glycoproteins and lipoproteins, which prevents the penetration of blood plasma macromolecular compounds (proteins) due to the pore size of the membrane in 2.9 nm and negative charge. Filaments with a thickness of 1.2-2.5 nm enter into "mobile" compounds with molecules of surrounding substances and form a thixotropic gel. Changes of the BM of the glomerulus are characterized by its thickening, homogenization, loosening and fibrillation. Thickening of BM occurs in many diseases with proteinuria.

The glomerular epithelium (podocyte) forms structures of "intertwined fingers", forming a three-dimensional filter with pores of 20-50 nm. The pore space is filled with glycocalyx, consisting of glycoproteins with sialic acid as a glycan carrying a high negative charge. Sialoproteins allow the passage of molecules with a diameter of 1.5 to 10 nm and prevent the passage of larger molecules. Changes in podocytes are most often secondary and are usually observed in proteinuria, nephrotic syndrome (NS). They are expressed in hyperplasia of fibrillar structures of the cell, the disappearance of pedicles, vacuolization of the cytoplasm, and violations of the slit diaphragm. These changes are associated with both primary damage to the basal membrane and proteinuria itself.

FEATURES OF THE STRUCTURE OF THE EYE SOCKETS IN CHILDREN

Novotorzhentseva A. — the 2nd year student
Supervisors: Pavlova A. E., Katina O.I.

The shape of the eye socket of newborns resembles a three-sided pyramid. The horizontal size of the newborn's eye sockets is larger than the vertical one. The eye sockets of the newborn are simpler and smaller, so they worse protect the eyeballs from injuries and make the impression of standing of the eyeballs. The eye slits are wider. By 8 - 10 years, the anatomy of the eye socket is approaching that of adults.

NEO-KANTIANISM

Novotorzhentseva A. — the 2nd year student
Supervisors: Matyushchenko V. S., Katina O.I.

Neo-Kantianism is a trend in German philosophy of the second half of the XIX — early XX centuries. Founders: Heinrich Rickert, Wilhelm Windelband.

This line considers society as an organization of spiritual and normative type, the laws of which refer to the nature of the target necessity. The philosophy of culture is valuable so it is impossible without anthropology.

Neo-Kantianism focused on the epistemology of I. Kant, interpreting Kant's "Thing-in-itself" as a mathematical limit to which the process of cognition is directed, but sometimes it does not reach.

Kantianism has done a lot especially in the cause of separation of natural and humanitarian sciences. The first ones use a non-metodic method (generalizing —based on the description of

the reference states), and the second ones use ideographic method (individualizing - based on the description of the reference states). Accordingly, the world is divided into nature and culture.

The subjects of the analysis of neo-Kantianism are universal forms of human activity: mythology, religion, language, art.

GOUT

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

Gout (gouty arthritis) is a metabolic disease characterized by a failure in metabolic processes, impaired metabolism of purine compounds, which occurs against the background of hyperuricemia — the accumulation and increase in the concentration of uric acid salts (urates) in the body. The disease manifests itself in the form of an acute form of arthritis with the formation of gouty nodes on the joints (tophi) and a violation of the kidneys. The joints of the big toe are more often affected. Frequently there are cases of manifestations on the knees, joints of the arch of the feet, ankle joints. The joints of the upper extremities are the least affected. A distinctive feature of gout is the formation of growths in the joints of the hands and feet that provoke intense pain.

Currently, the gout is considered to be a rare disease. It affects 3: 1000 of population. In Europe, this disease can be found in 2 % of the population, and in Russia — in 0.1%. Gouty arthritis usually occurs in adulthood-after 40 years in men and after menopause in women.The disease code for ICD 10 is M10.

Asymptomatic hyperuricemia is an asymptomatic stage. It is at this time that a constant increase in the level of uric acid in the blood above 6.0 mg/DL leads to the formation of urate crystals.

Acute gout - at this stage, crystals that are deposited in the joints are activated and cause episodes of severe and sudden pain, accompanied by swelling in the joint lasting 3 to 10 days, stiffness, redness, fatigue and sometimes mild fever.

Idiopathic gout - at this stage, a person is between outbreaks of gout. Asymptomatic means the time when joints are functioning normally. However, in the absence of symptoms, continued precipitation of uric acid crystals begin to accumulate. Gouty attack can occur after a long time period - months, years.

Top chronic gout - is late stage of gout in which the index of urate crystals consolidate in hardened lumps (tophi). The formation of these mineralized masses gradually destroys osseous and cartilage tissue and leads to chronic arthritis and joint deformation.

1. Gouty arthritis - has the classic symptoms of gout in the form of sudden sharp pain.
2. Infectious-allergic form - manifests itself as a consequence of infectious diseases.
3. Subacute arthritis is an unexpressed symptom. It is manifested in women in the form of painful sensations in the joint of the big toe.
4. Rheumatoid form - numerous lesions of small joints.
5. Asthenic form - unexpressed symptoms accompanied by aching pain syndrome.
6. Periarthric form-the defeat of the tendons of the joints.

7. Pseudoplasmodia form - is characterized by intense pain, fever, chills, and general weakness.

There are 2 types of gout: primary and secondary. Gout of the primary type is most often hereditary - is one example caused by mutations in the gene SLC2A9 and SLC22A12, leading to impaired renal excretion of uric acid. The inability of the body to control the process between how much uric acid is produced and how much is excreted will eventually lead to hyperuricemia. Gout of the secondary type develops in the presence of previous factors, such as: high cholesterol in the blood, malfunctions of metabolic processes, diabetes, thyroid disease, congenital or acquired kidney disease.

FETAL SURGERY

Khorko A.V.- the 3rd year student
Supervisors: Prof. Grebenyuk V.V., Katina O.I.

Fetal surgery is a field of surgery whose object is the fetus in the womb. Fetal operations are performed when antenatal correction can improve outcomes for the health and life of newborns. In fetal surgery three main technologies are used: cordocentesis, fetoscopy and open uterine surgery.

During fetoscopy, an endoscope is inserted into the abdominal cavity and uterus of a pregnant woman through 1.5—2 cm sections and is used for manipulations: blood transfusion; the introduction of cylinders that expand the arterial or esophageal lumen of the fetus; surgical maintenance of bronchopulmonary patency in the fetus; vaginal coagulation; etc. The diameter of the fetoscope is 1.2—2 mm. Manipulations are carried out under local or local-regional anesthesia. The procedure is completed by amniodrainage until a normal amount of amniotic fluid is reached.

Operations on an open uterus are, in fact, similar to cesarean section, but skin and uterine incisions are, as a rule, two times smaller. Thus, the incision on the uterus is usually 5—7 cm, and the incision in the anterior abdominal wall is 10—12 cm. The fetuses are removed through the incision without crossing the umbilical cord, adhering to the rule “as much as possible inside the uterus, as little as possible outside”, and carry out the necessary intervention. The operation is performed under general anesthesia or under epidural anesthesia. Terminals are placed on the edges of the wound on the uterus to prevent bleeding. Often, open access allows a number of manipulations that are not possible with endoscopic access.

AGE FEATURES OF OVARIAN DEVELOPMENT

Narzulloeva D. — the 2nd year student
Supervisors: Pavlova A.E., Katina O.I.

The ovaries of the newborn are located in the abdominal cavity. The shape of the ovaries is cylindrical or prismatic elongated; the length is 1.5-2 cm; width - 0.5 cm; thickness - 0.1-0.35 cm. The surface is smooth, the number of primordial follicles reaches 500-700 thousand, a large number of atresizing follicles are noted. There are also mature follicles that indicate the possibility of estrogen synthesis during the neonatal period.

In neutral period the size of the ovaries up to 5-6 years also varies slightly, the mass increases from 0.53 to 1.01 g and by 8 years is about 1.5 g.

During this prepubertal period significant changes in the genitals occur as a result of activation of the hypothalamic-pituitary region, ovaries and adrenal glands. Ovarian mass increases, follicles are at different stages of development, but not one of them reaches maturity. There is no ovulation.

Puberty. There is the increase of LH and FSH emissions. Cyclical changes occur under the influence of ovarian hormones in the functional layer of the endometrium.

Youthful period. In response to the rhythmic release of GnRH, the release of LH and FSH increases that leads to synthesis potentiation of estradiol in the ovaries.

SPIROHYDRA IS ONE OF THE FACTORS OF THE ECOLOGICAL DISASTER OF LAKE BAIKAL

Balueva N., Grif V.- the 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

In 2015, Lake Baikal is threatened by an environmental disaster. The lake is filled with Spirogyra. In 2010, environmentalists conducted research, and it was noticed that the problem was observed in places with a higher concentration of phosphates and nitrates. These compounds are contained in plastic detergents. Also, the causes include the disease of sponges, natural filters of Lake Baikal as a result of the release of industrial wastes, marine vessels; forest fires; lack of sewers in nearby settlements. In 2016, scientists noted that the most prevalent areas of Spirogyra were tourism-dominated areas, such as the Bay at Cape Berezovy, Baikalsk, v. Bolshoe Golousnoe and Bay Listvenny. In 2013, the Limnological Institute of the SB RAS has begun and still continues the work in the field of examination and search of problems. The state allocated 26 billion rubles for this purpose, but nothing was done to solve this problem. In the summer of 2018, an interdepartmental meeting was held in Irkutsk, where the Ministry of Natural Resources S. Donskoy said that the allocated money and the deadline were not enough, and it was necessary to prolong the work up to 2030 and to increase funding. But the Ministry of Finance refuses to finance the project.

So, at the moment, the fight against spirohydra is carried out on a volunteer basis.

However, due to rapid reproduction, Lake Baikal is threatened with shallowing (in 2017, Lake Baikal has become shallow by 2.5 m).There is the death of endemic species (gastropods, Omul, Golomyanka, sponges, Baikal seal), water becomes unfit for drinking (as a result of rotting algae), global warming, including drought.

To save the Baikal basin it is necessary: 1.Completely eliminate waste flow into the lake. 2.To create a system of environmentally safety modern purification facilities. 3.To develop ecological, but not commercial tourism.

DISEASES OF ENDEMIC GOITER THROUGHOUT RUSSIA AND IN THE AMUR REGION

Efimov N. V., Ragimov A.D.- the 3rd year students

Supervisors: Zhuravleva O.V., Katina O.I.

Endemic goiter is an enlargement of the thyroid gland caused by iodine deficiency in the body. Types of endemic goiter: euthyroid, hypothyroid, hyperthyroid, diffuse, nodular, mixed, unilateral, bilateral. Endemic goiter is caused by insufficient intake of iodine that is necessary for the thyroid gland to produce thyroid hormones-triiodothyronine (T3) and thyroxine (T4).

Treatment of endemic goiter: several courses of potassium iodide, diet therapy with products that are rich in iodine, hormone replacement therapy (complicated hypothyroidism), surgery.

Prevention: regular consumption of iodized salt, seafood, walnuts, persimmons; in the diet fish and other foods rich in iodine must be present.

FEATURES OF THE STRUCTURE OF THE CONVOLUTED SEMINAL TUBULE

Khudoleeva M. —the 2nd year student

Supervisors: Krasavina N.P., Katina O.I.

The male reproductive system includes the male sex glands-testicles, VAS deferens and additional organs of the male reproductive system.

Connective tissue around the convoluted tubules is permeated with a dense network of lymph and hemocapillaries, providing spermatogenic cells with nutrients. Hemocapillaries are accompanied by layers of connective tissue, containing Leydig cells. Their function is to produce the male sex hormone-testosterone.

Internally, the contents of the convoluted seminal tubule are Sertolli cells and spermatogenic cells of varying degrees of maturity. Sustentocytes have an irregular conical shape. Their cytoplasm contains a well-developed smooth endoplasmic network and elements of the Golgi complex.

Sertolli cells perform a number of functions that ensure the normal development of spermatogenic cells: trophic, phagocytic, participation in the formation of the hematotesticular barrier.

The trophic function of Sertolli cells in relation to spermatogenesis ones is to deliver oxygen and nutrients to them from tissue fluid. Sertolli cells secrete such factors as growth factors, steroids. These cells are the main producer of the fluid of the seminal tubules, part of which is reabsorbed again.

The hematotesticular barrier performs the function of genetic protection of the most vulnerable meiotic dividing spermatocytes and spermatids in the chromatin condensation phase. Hematotesticular barrier is one of the important mechanisms controlling spermatogenesis and fertility. It isolates autoantigenic cells from the immunological apparatus of the body, provides their genetic protection and participates in the hormonal regulation of spermatogenesis.

In the process of spermatogenesis, sperm formation occurs. The phases and stages of development begin at puberty in the adolescent and continue constantly until old age, and in some men until the end of life.

Hormones regulate spermatogenesis. The process of sperm formation lasts for 75 days in the convoluted tubules that are located in the testicles. During this time, the male sex cell goes

through the stages of formation from spermatogony to sperm. The optimal temperature for spermatogenesis is considered to be 34°C. With higher rates the sperm are formed less intensively, their morphology, characteristics and mobility may be disturbed.

IN VITRO FELTILIZATION

Zhalsanova A. — the 2nd year student
Supervisors: Prof. Sayapina I. Yu., Katina O.I.

In vitro fertilization (IVF) is a technology that allows a woman to bypass the possible causes of infertility by extracting germ cells from the organisms of future parents and artificially connecting them in the laboratory. After that, the viable embryo is transplanted back into the uterus of the patient or surrogate mother. The success rate of IVF on average is 30%. But the true chances of a positive result of the procedure are assessed individually. They depend on the state of health and age of the spouses, the professionalism of doctors, the quality of laboratory equipment and the use of auxiliary technologies.

1-3 weeks before the expected day of conception, the patient is prescribed hormonal drugs in the form of tablets or injections, which she takes according to the scheme proposed by the doctor. On the appointed day, when the ultrasound shows that the follicles in the ovary have grown to the desired size, the doctor inserts a needle through the vaginal wall into the abdominal cavity of the expectant mother to pump out (aspirate) the contents of the mature follicles and detect the egg in the follicular fluid. The embryologist studies the obtained eggs under a microscope, evaluates their quality and places them in an incubator that controls the temperature, the content of gases (carbon dioxide, oxygen), and humidity. On the same day, the man surrenders sperm, which is processed, after which doctors select the most complete and viable sperm. When everything is ready for fertilization, the embryologist (depending on the chosen tactics) either adds sperm to the container with the egg, or independently introduces the male sex cell inside the female one (ICSI). As a rule, several eggs are used for fertilization, because not always the process is successful and not all embryos are viable. Only one sperm should get in each egg to ensure the chromosomal set of normal human cells: 46 chromosomes - 23 chromosomes receives a zygote from the egg and sperm. Fertilized eggs are replaced in an incubator — they need to grow in a nutrient medium before they are returned to the woman's body. It takes 2-5 days. At the request of patients, several viable embryos can be frozen — so, in case of unsuccessful completion of IVF, the procedure does not have to be repeated from the beginning. At the same time, specialists, if necessary, carry out pre-implantation diagnosis — identify possible genetic abnormalities in the embryo.

After 5 days, if the embryo develops safely (such an embryo is called a blastocyst), the woman returns to the clinic, where during a short painless procedure on a gynecological chair, the embryo (usually one or two) is transferred to the uterine cavity.

It is believed that with each subsequent IVF attempt, the probability of pregnancy is reduced. But one should not forget that it is necessary to consider not only the chances of success in each specific protocol, but also the total probability of achieving the goal. So, if a couple who

decided on one IVF has a 30 % chance of having a baby, then spouses who make three attempts will have about 70%.

CONGENITAL DISEASES OF CARBOHYDRATE METABOLISM

Bugera E., Nerukh N. 2nd year students
Supervisors: Can. Med. Sc. Egorshina E. V., Katina O. I.

Alactasia is a rare hereditary disease. It is inherited in an autosomal recessive manner. At the origin of the disease is the lack of activity of the enzyme lactase in the mucous membrane of the small intestine. Undissolved lactose, received with food, undergoes bacterial fermentation in the lumen of the colon that leads to the development of flatulence and profuse watery diarrhea.

Hypolactasia is a congenital disease. It consists in reducing the activity of the enzyme lactase after the termination of the breastfeeding period. The onset of the decrease in lactase activity occurs approximately at the age of 2-5 years.

Galactosemia is a hereditary enzymopathy. It is inherited in a recessive pattern. Galactosemia is based on a violation of galactose metabolism due to the absence of the enzyme galactose phosphate-uridyltransferase. As a result, the blood accumulates in high concentrations of galactose and galactose phosphate. Endogenous intoxication develops, leading to a damage of the brain, liver, lens of the eye, kidneys.

Glycogen storage disease (glycogen storage disease) is a hereditary disease. It is inherited in a recessive pattern. As a result of enzyme deficiency, glycogen accumulation occurs in tissues, most intensively in the liver, skeletal and cardiac muscles. Glycogen, accumulating in tissues, causes their degeneration and death. Muscular weakness, growth retardation, obesity, liver and kidney damages are observed.

Intolerance to sucrose is a hereditary disease. It is inherited on autosomal recessive type. The disease is associated with a defect in the enzyme sucrose (invertase) in the mucous membrane of the colon, resulting in a violation of the wall splitting of sucrose into glucose and fructose.

Intolerance to trehalose is a rare congenital disease manifested by vomiting and diarrhea after eating young mushrooms containing the disaccharide trehalose.

Intolerance to maltose and isomaltose is a deficiency of α-1,4-glycosidase and α-1,6-glycosidase. The symptoms appear when eating a starch (cereal feeding).

Fructose intolerance is a hereditary disease caused by the absence of a number of enzymes responsible for the conversion of fructose in the liver (fructose phosphataldolase, fructose diphosphatase).

IRIDODIAGNOSIS

Sakharova E. — the 2nd year student
Supervisors: Pavlova A.E., Katina O.I.

Iridodiagnosis is a new method for the topical diagnosis of diseases by changes in the structure and color of the iris.

The iris of the eye is a kind of neurovascular-muscular screen, in the receptors of which there are continuous changes. Disorders that have arisen in the body lead to a change in certain vascular microzones of the iris, to "turn on" or "turn off" a certain group of melanocytes. Iridoscopically this is expressed in the form of enlightenments, gaps, age spots, rings, etc. The evaluation of these changes in the iris that has a clear somatotopic division allows us to establish with certain accuracy the location, but not the nature of the pathological focus.

According to iridodiagnostics, various parts of the iris correspond to internal organs. Various maps of similar correspondences are compiled; a typical map contains about 80-90 sites.

Iridodiagnostics begins with a general examination of the iris using various magnifying devices. The attention is paid to color uniformity, equality and density of fibers and pigment layers of the iris of the right and left eye. Then, the obtained data is compared with the map and a “diagnosis" is formed.

According to the morphological passports of ASMA students, an analysis of 57 irises was carried out. There were 20 male and 37 female aged 18-19 years. A predisposition to diseases was revealed:

Digestive system organs-18 people (7b, 11g)

Respiratory organs-12 people (8b, 4g)

The organs of the urinary system-11 people (6b, 5g)

After the survey, it turned out that many of the students are registered with a therapist with diseases of the internal organs.

Thus, iridodiagnostics is a poorly studied, but very promising method, characterized by accessibility and a high degree of information. In recent years, an increasing number of researchers and scientific groups in various countries have been included in the development of the clinical aspects of iridology.

APPENDIX. STRUCTURE. ROLE IN IMMUNITY

Sakharova E. — the 2nd year student
Supervisors: Can. Biol. Sc. Ogorodnikova T.L., Katina O.I.

The appendix is an elongated formation, which is a vermiform appendix of the cecum. Its size can vary between 2-20 cm. In diameter, it reaches 10 mm. Its location is normally in the projection of the right iliac region in the posterior part of the abdomen.

Structure: The appendix wall consists of 4 membranes characteristic of the colon:

mucous membrane (cylindrical single-layer epithelium, own and muscle plate); can form crypts;

submucosal (loose fibrous unformed connective tissue);

muscular (inner circular and outer longitudinal layers of smooth muscle tissue with intermuscular loose fibrous connective tissue);

serous (a layer of loose fibrous connective tissue and mesothelium).

But there are also structural features:

Lack of folds - the mucous membrane does not form lunate or other folds.

Obliteration of the lumen - the lumen of the appendix can overgrow with connective tissue over the years. Closure of the lumen is called obliteration.

The structure of the epithelium - in the epithelium, the proportion of goblet cells is small.

The presence of lymphoid tissue - there are numerous large lymphatic follicles and interfollicular lymphoid tissue in the mucous membrane.

Role in immunity: Numerous lymphoid nodules have B-zones, consisting of a reactive center and a mantle zone of memory B-lymphocytes. Nodules undergo transformation and reproduction of B-lymphocytes under the influence of antigens, which are processed by macrophages and follicular dendritic cells. Activated B-lymphocytes turn into plasmocytes and memory B-lymphocytes. Plasmocytes synthesize antibodies that provide immunity to the entire intestine.

It is also believed that the appendix is a repository of beneficial intestinal microflora. With the activation of conditionally pathogenic microflora during intestinal diseases, the number of "useful" microorganisms in the intestine decreases sharply. But in the appendix, as in the repository of "beneficial" bacteria, they remain and contribute to a new colonization of the intestine after recovery.

Inflammation of the appendix is called appendicitis.

ROBOT SUBSTITUTION OF MEDICL STAFF IN MOREDRN MEDICAL CLINICS

Nikonova J. — the 3rd year student
Supervisors: Doc. Med. Sc. Grebenjuk V.V., Katina O.I.

There are several types of medical robots: surgical, rehabilitation, simulation, pharmaceutical, telepresence, and companion.

Surgical Robot: Da Vinci. This is a powerful system that facilitates the work of a surgeon and creates a more favorable outcome of operations. It consists of a console, and a joystick; racks are near the operating table, where there are mechanical arms in which the camera and EndoWrist tools are fixed (made on the model of the human wrist they have even a greater range of movements than the human hand has). The InSite viewing system with a high-resolution 3D endoscope and image processing system provides a natural image of the surgical field.

Rehabilitation Robot: HAL. This is a robot-suit designed to lift paralyzed people to their feet. Exoskeleton sensors attached to the surface of the skin sense weak electrical impulses that the brain sends to the muscles, and then the robot motors do all the work.

Simulator Robot: The HPS (Human Patient Simulator) robot dummy is the most functional model of the robot simulator. It has monitoring, gas exchange, pulse, mechanical ventilation, light-sensitive eyes, and pulse.

Pharmacist Robot: HOSPI. The robotic "first-aid kit" 130 cm in height carries up to 20 kg of drugs and samples. Instructions about the prescribed drugs are given to the robot's memory, and HOSPI itself chooses the optimal route.

Remote presence robot: RP-VITA. Using this robot a doctor can virtually make rounds or observe a seriously ill patient 24 hours a day, being in another place. RP-VITA carries with itself

a basic set of diagnostic tools, and if a doctor needs to clarify something, the nurse immediately carries out an examination. A doctor only needs a laptop to communicate with the patient.

Companion Robot: Kirobo. The humanoid robot is designed specifically for “live” communication with humans. It speaks, understands what has been said and naturally responds to questions. Kirobo artificial intelligence distinguishes human speech from surrounding sounds, highlights individual words in its flow and determines the meaning of phrases. Android remembers and recognizes specific people, distinguishes emotions expressed by facial expressions and gestures.

There are some pros and cons in robot medical personnel replacements. Advantages of robots: good computing for doing things, force, endurance, lack of sleep and food breaks, lack of fear, excitement.

Disadvantages: non-universal helpers, the limited mind, lack of desires, long and frequent practice, anthropomorphism of some robots.

The development of medical robotics is expected to make a revolutionary breakthrough in the treatment of even the most serious diseases. But, nevertheless, only a human can perform lots of certain manipulations.

UNCOMMON CASE OF MIXED VIRAL-BACTERIAL GENERALIZED INFECTION IN A 12 YEARS OLD CHILD

Kovalchuk A., Galachev D.O. the 5th year students
Supervisors: Gavrilov A.V., Katina O.I.

The problem of acute neuroinfections in children is one of the urgent due to the severity of their course, difficulties in diagnosing, and the frequency of deaths. The aim of investigation is to demonstrate a case of severe mixed infection.

A 12-year-old patient was admitted to the Amur Regional Infectious Diseases Hospital with a preliminary diagnosis of “alimentary toxoinfection” with complaints of a single water stool, a headache and a fever up to 37.2 ° C. From the anamnesis it was found out that he became ill acutely with a three-time vomiting, headache, flaccidity, and an increase of temperature up to 39° C. On the evening of the day of hospitalization, dubious meningeal symptoms appeared. On the second day, meningeal symptoms increased. The confusion and convulsions appeared. The child was transported to the intensive care unit and the therapy was started. Spinal puncture and serological examination of cerebrospinal fluid for meningococcus were performed. N. Meningitidis group A was revealed. Further, the child's condition worsened due to neurological symptoms, coma 1. CT scan of the brain was carried out: picture of edema of the basal parts of the brain. Taken into consideration the fact that the child was from an endemic area to encephalitis, a liquor study was performed by PCR for tick-borne encephalitis. The results were positive.

As a result, the diagnosis was made: Mixed infection: tick-borne encephalitis, meningoencephalopoliomyelitis form, severe course. Meningococcal infection was in generalized form, severe course. Meningococcal meningoencephalitis had a severe course.

Complication: cerebral edema, coma 1-2. Concomitant diagnosis: alimentary toxoinfection (Enterobactercoacae 10^6) gastroenteric form.

A timely diagnosis was difficult due to the presence of clinical symptoms of an alimentary toxoinfection in the patient, the lack of information about tick suction in a case- history, as well as a combination of two serious diseases that altered each other's clinic.

Thus, the child developed a severe mixed infection, the course of which was complicated by cerebral edema and the development of right-sided polysegmental pneumonia with subsequent residual complication in the form of akinetic mutism.

PHYSIOLOGICAL AND PATHOLOGICAL NEOANGIOGENESIS

Shevchuk A. — the 2nd year student
Supervisors: Can. Biol. Sc. Ogorodnicova T.L., Katina O.I.

Neoangiogenesis is the process of formation of new blood vessels from existing vascular structures. There are 2 types of angiogenesis: pathological and physiological. The last one plays an important role in the formation of the corpus luteum, endometrial growth, and placenta formation.

Angiogenesis is a complex multi-stage process. It has the stages of budding, anastomosing and differentiation. First, the growth buds are formed. The endothelial tubes branches from these buds and grow towards each other closing at the ends and thus forming a new capillary. The main stimulus is hypoxia that induces the formation of angiogenic factors-vascular endothelial growth factor (VEGF-vascular endothelial growth factor) and fibroblast growth factor (FGF-fibroblast growth factor), which stimulate neoangiogenesis .

Pathological angiogenesis plays an important role in the growth of malignant tumors and their metastasis. In the initial stages of growth, the malignant tumor is small and devoid of blood vessels. Tumor cells synthesize angiogenic factors that are diffusely delivered to the endothelium of blood capillaries and begin angionesis. Newly formed blood vessels grow into the tumor, feeding it and increasing the growth. Tumor cells are released into the lumen of blood vessels and with the blood flow are spread throughout the body.

Thus, the study of the mechanisms and factors regulating angiogenesis is a major fundamental problem of applied importance for medicine.

ANOMALIES OF THE DEVELOPMENT OF THE EXTERNAL NOSE

Bogdanova D. — the 2nd year student
Supervisors: Pavlova A.E., Katina O.I.

All congenital malformations of the nose are divided into three main groups:

1) Dysmorphogenesis:

Hypogenesis is characterized by the underdevelopment of one, several, or all of the nasal formations (nostrils, wing cartilage, turbinated bones, delivery sinuses) on one or two sides. Total agenesis can also be determined, in which the listed structures are completely absent.

Hypergenesis is the excessive development of nasal structures.

Humpback or curvature of the back, one- or two-sided lateral trunk, C or S-like deformations of shells and partitions.

2) Persistence associated with unfinished processes of fetal development:

Total or partial medial or lateral cleft of the nose, doubling of the nasal tip and turbinated bones, dermoid cyst and fistula, atresia of the nasal passages.

3) Dystopia is a congenital anomaly of the nose, in which it has an atypical localization:

The appendage of the septum, bullous middle turbinated bone, dystopia of the mouth of the nasolacrimal canal.

ENDEMIC GOITER AND METHODS OF ITS PREVENTION

Khudoleeva M., Kozlova A.-2nd year students
Supervisors: Etmanova L. Ya., Katina O. I.

Endemic goiter is a disease characterized by the appearance of goiter. It appears in areas the biosphere of which is poor in iodine. Insufficient intake of iodine in the body (norm 180-280 mcg/day) leads to a decrease in the production of thyroid hormones, increased secretion of TSH with excessive stimulation of the gland, which is invariably accompanied by compensatory hyperplasia of the thyroid gland and leads to the formation of goiter.

Endemic goiter may be:

- euthyroid — when the thyroid gland is enlarged in size, but hormone levels remain within normal limits;
- hypothyroidism-in combination with hypothyroidism, decreased thyroid function;
- hyperthyroidism - in combination with increased thyroid function (uncommon).

There are also:

- diffuse goiter-evenly enlarged thyroid gland;
- nodular goiter - the presence of nodes of denser tissue in the mass of the gland;
- mixed goiter, when, along with diffuse enlargement, individual nodes are palpated in the thyroid gland.

On localization goiter can be unilateral and bilateral.

Clinical picture and diagnosis. Most often, patients note the presence of goiter, "feeling of awkwardness" in the neck when moving, dry cough. With a large goiter, especially those located retrosternal, respiratory disorders and feeling of heaviness in the head when the body is tilted may occur. On examination, such patients are found nodular or diffuse goiter of various sizes, expansion of the veins of the neck. Compression of the sympathetic trunk causes Bernard-Gorner syndrome (ptosis, myosis, enophthalmos).

Instrumental method of diagnosis of endemic goiter is ultrasound. Thanks to this study, the form of the disease is established: diffuse or nodular endemic goiter.

Endemic diffuse goiter is the most common form of goiter. Women get it 3-4 times more often than men. This is due to the increased need of the female body for thyroid hormones during puberty, pregnancy and lactation.

About 200 million people in the world suffer from endemic goiter. WHO calls endemic goiter "one of the most common human disasters". 90% of all goiter cases in Russia and CIS countries are caused by iodine deficiency. With a slight increase in the gland, several courses of

potassium iodide and diet therapy with iodine-rich products are often enough. Treatment of endemic goiter complicated by hypothyroidism involves hormone replacement therapy. Treatment of endemic nodular goiter in the late stage of the disease is mainly surgical.

An effective prevention of the development of endemic goiter is the regular consumption of iodized salt. It is important to add salt to food after cooking, as trace elements of iodine are destroyed during heating.

Regular consumption of seafood, walnuts, and persimmons can also reduce the probability of endemic goiter. Fish and other rich iodine products must be in food ration of a person.

FOREST FIRES IN SIBERIA (2019)

Buinova Y., Chernomorcev I. - the 2nd year students
Supervisors: Can. Biol. Sc. Guba L. A. Katia O. I.

Forests are the lungs of the Earth, the wealth of the country and its future.

Forest fires in Siberia - began in July 2019 in remote areas of the Krasnoyarsk territory, the Irkutsk Region, Buryatia, Transbaikal and Yakutia. By the end of the month, their total area was 1.13 million hectares in Yakutia and 1.56 million hectares in other regions. Summing up it is 3 million hectares that is comparable to the territories of Belgium or Crimea.

The insufficient number of measures taken to extinguish fires in a timely manner is partly due to the fact that some of the areas with fires belong to the so-called "control zones". According to the order of the Ministry of Natural Resources and Ecology of July 8, 2014 "On approval of forest fire suppression Rules", regional authorities may not extinguish forest fires in "control zones" since 2015 if they do not threaten settlements and if "the projected cost of extinguishing exceeds the projected harm".

Economic damage from forest fires since the beginning of 2019 amounted to about 7 billion rubles. The monetary equivalent is important, but no one can assume the long-term consequences. For reference - during the fires dozens of millions of tons of carbon dioxide are released in the atmosphere of the Earth, accelerating the global warming. As experts say, such fires are a potential threat to the Arctic and the climate as a whole. Clouds of smoke reach the Arctic regions. The problem is that the soot, falling on the ice, obscures it, thereby reducing the reflectivity of the surface and retaining more heat. In this regard, in the near future, the ice in the Arctic will melt much faster.

THE CONSEQUENCES OF AN ACCIDENT IN THE BAI-TAIGINSKY DISTRICT OF THE REPUBLIC OF TUVA

Oorzhak A., Mongush S. — the 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

Road safety is one of the most important socio-economic and demographic tasks of Russia at the present stage. Traffic accidents are one of the most dangerous threats to the health and life of people around the world. The problem is compounded by the fact that the victims of the accidents are usually young people and children. According to WHO, the mortality due to road traffic accidents continue to increase. About 1.35 million people die every year. Between 20 and

50 million people receive non-fatal injuries, many of which lead to disability. The problem of underdeveloped transport infrastructure is also identified. The condition of roads often does not meet regulatory requirements. It is necessary to optimize the acceleration of the pace of construction and reconstruction of paved roads.

July 12, 2019 in the Republic of Tyva on the territory of the Bai-Taiginsky district in the town of Dustug-Khem, when trying to cross the Shui River, an UAZ car toppled over. According to the Ministry of Emergency Situations, on July 12, early in the morning, two families left the shepherd camp and went on vacation to hard-to-reach lakes with mineral springs. They did not take into account that for several days it was raining heavily in Tuva, as a result of which the river level rose. The driver decided to cross the Shui River. Right in the middle of the river, the engine of the car failed, water instantly flooded it, as a result of which they began to be carried away by the current, and then it was completely overturned by a wave. The UAZ car sank. Two adults, having climbed out, tried to hold on to the car, but they were blown away by water. As a result, 10 people died, including 6 minors. Only two men who managed to get ashore managed to escape. A criminal case has been instituted on this fact under the article “Violation of the rules of the road, resulting in the death of two or more persons by negligence”.

PATHOGENESIS OF MULTIPLE SCLEROSIS

Buinova J. — the 2nd year student
Supervisors: Doc. Biol. Sc. Batalova T. A., Katina O.I.

Multiple sclerosis (MS) was first described in 1868 by the French neurologist Jean Martin Charcot. Now it is one of the most common chronic diseases of the central nervous system (CNS), affecting people of almost all ages, but giving "preference" to young women living in the northern latitudes. In MS, the bodys immune system attacks its own myelin — the membrane surrounding the axons of nerve cells and affecting the rate of transmission of an electrical impulse through them. Being without a protective myelin layer, the fibers of nerve cells become vulnerable and may die.

The prevalence of multiple sclerosis in the world. The highest incidence of MS is recorded in Canada: 291 cases per 100,000 of population. In Russia, the incidence of MS is 30-70 cases per 100 000 population (high and medium risk zone).

When does the disease occur?

Despite the fact that the central nervous system is damaged primarily in MS, the start of autoimmune processes does not occur in it. The activation of autoreactive T and B lymphocytes occurs on the periphery - primarily in the lymph nodes.

Mechanism:

1. Primary activation of lymphocytes

To overcome the protective mechanisms of the brain, autoreactive lymphocytes are activated outside the central nervous system. The signal for this is its presentation of antigen or autoantigen by antigen-presenting cells (APC). As a result, activated autoreactive T- and B-lymphocytes produce cytokines, powerful inflammation inducers by themselves.

It results in an imbalance of cytokines maintained by type 2 T- helper cells (Th2) and regulatory T-cells (Treg). Under conditions of increased production of inflammatory cytokines, naive T-lymphocytes differentiate into type 1 (Th1) and type 17 (Th17) T-helper cells, producing and secreting interferon-γ and tumor necrosis factor (TNF), and these molecules are powerful inflammatory cytokines. When interacting with an antigen or autoantigen, the activated B-lymphocyte becomes a source of cytokines necessary for the activation of pathological Th1 and Th17. The circle closes: activated autoreactive T-and B-lymphocytes produce cytokines-powerful inducers of inflammation by themselves.

2. Lymphocytes in the brain

The key stage of RS development is the increase of BBB permeability. Under the influence of inflammatory cytokines there is a whole series of fatal events:

a) various immune cells begin to produce chemokines (cytokines that regulate the migration of immune system cells) that "invite" lymphocytes into the capillaries of the brain;

b) endothelial cells produce more adhesion molecules on their surface that leads to the" anchoring " of lymphocytes on the walls of blood vessels;

c) developing inflammation increases the synthesis of enzymes that disrupt close contacts in the endothelium. As a result gaps appear in the BBB, facilitating the mass migration of pathological cells from the vascular bed to the Central nervous system.

3. Secondary activation of lymphocytes

Resident agroindustrial complexes are activated. They present autoantigens (myelin proteins) to T-helper cells in the central nervous system.

Macrophages intensively engulf myelin autoantigens. In addition, they synthesize reactive oxygen species, nitrogen monoxide, glutamate, TNF a-neurotoxic substances that directly damage the myelin coat. At the same time, B-lymphocytes synthesize antibodies to proteins and lipids of the myelin coat, activating a membrane-attacking complex that damages the myelin coat.

Neurodegeneration in the central nervous system is the death of nerve cells, leading ultimately to a complete stop of the transmission of nerve impulses. In MS, it develops independently of autoimmune inflammation.

The mechanisms leading to neurodegeneration in MS:

1. Excitotoxicity caused by glutamate leads to the death of oligodendrocytes and neurons. Glutamate — the most important excitatory mediator of the Central nervous system-is toxic in itself, and after it performs its function, it should be quickly removed. However, in MS, for various reasons, this does not happen. Moreover, activated T-lymphocytes themselves serve as a source of glutamate. It is not surprising that in the brain of patients with MS its increased content is found.

2. There is the redistribution of ion channels and the change in their permeability in the axons of neurons that leads to disruption of the ion balance, and for the axon it ends in damage and death.

3. Imbalance of remyelination factors (nerve growth factor and brain neurotrophic factor) necessary for the survival of oligodendrocytes and neurons.

So, the described series of pathological events leads to the formation of demyelination sites on the nerve fibers, death of oligodendrocytes and neurodegeneration. The rate of transmission of a nerve impulse from neuron to neuron decreases. As a result various body systems stop receiving signals from the brain and symptoms of the disease occur.

HURRICANE ELEANOR IN THE NORTHERN PART OF EUROPE IN FEBRUARY 2018

Loshakova A., Ashakhanova I.- the 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

On the territory of European cities, hurricane Eleanor was raging. It left the trace in the UK, Germany and France.

As a result of hurricane Eleanor that passed through most of the countries of Northern Europe, three people were killed.

One person - an athlete — skier died in the French Alps, another 15 were injured across France. Two people were washed away by a large wave in the Basque Country, Spain.

January 3 winter storm "Eleanor" left without light more than 200 thousand inhabitants of France. Winds of 125 km/h (up to 140 km/h was recorded at the top of the Eiffel tower) disrupted power supplies in Normandy, Ile-de-France, Picardy, Lorraine and Pas-de-Calais. Flights were canceled from the airports of Paris, traffic on Railways and roads was suspended, in the cities the entrance to parks was limited in order to avoid accidents due to falling trees. In the Alpine mountains, a tree fell on one skier, and besides him, 9 more people were injured.

In the Department of Savoy, ski resorts were closed.

In Germany, the hurricane was named "Burglind". Here, the wind with a speed of 120 km/h caused disruptions in the movement of traffic. In the Swiss capital, experts predicted avalanches, and in other cities, 14,000 residential buildings were de-energized. In the city of St. Gallen, in the Eastern part of Switzerland, skiers could not get off the mountain slope, and near Lucerne, the wind speed reached 195 km/h.

PORPHYRIA

Loshakova A. — the 2nd year student
Supervisors: Feoktistova N. A., Katina O.I.

Porphyria is a disease in which the reproduction of heme — the non-protein part of hemoglobin is disrupted. It resulted in an excessive accumulation of toxic substances in the body. Porphyrins and their precursors have the ability to bind metals in the body, primarily iron and magnesium.

The disease is manifested with photodermatosis, hemolytic crises, gastrointestinal and neuropsychiatric disorders.

Severe cases of the disease formed the basis for legends about vampires.

Porphyria congenital form (block in the initial stages of heme synthesis) and acquired one (block in the later stages).

Inflammation and ulcers damage cartilage, ears, nose and eyelids. During the disease, tendons are deformed that sometimes leads to Dupuytren's Contracture (crooked fingers disease).

The most common type is acute intermittent porphyria (AKI). The disease is based on a violation of the activity of the enzyme uroporphyrinogen I-synthase, as well as an increase in the activity of 6-aminolevulinic acid synthase.

Diagnosis of acute intermittent porphyria is based on the detection in the urine of patients with precursors of porphyrin synthesis (the so-called porphobilinogen), as well as 6-aminolevulinovoy acid.

TICK-BORNE ENCEPHALITIS VIRUS INFECTION AND RICKETTSIOSIS INFECTION IN THE AMUR REGION

Dalai-ool A., Panova E. the 3rd year students
Supervisors: Doc. Med. Sc. Chubenko G.I., Katina O.I.

Tick-borne encephalitis virus is neurotropic, RNA-containing. It belongs to the genus Flavivirus, Flaviviridae family of arboviruses ecological group. The main reservoirs supporting the existence of the pathogen are ixodid ticks - Ixodespersulcatus and Ixodesricinus. The traditional areas of tick-borne encephalitis spread are Siberia, the Urals, and the Far East. The disease is characterized by strict spring-summer seasonality, corresponding to tick activity. Ways of transmission: transmissible, rarely - alimentary.

Annually, in the Amur Region, single cases of tick-borne viral encephalitis are recorded. While the incidence of people with other tick-borne infections is noted: tick-borne borreliosis, North-Asian tick-borne rickettsiosis. When analyzing the incidence of tick-borne viral encephalitis in the Amur region for 30 years (since 1978), it was found that 162 cases of tick-borne viral encephalitis were registered in the region.

Tick-borne rickettsiosis (tick-borne typhus, Siberian-borne typhus, North Asian rickettsiosis) is one of the three most important representatives of the KPL group, the active foci of which are dangerous for the population. They are mainly in forest-steppe regions of Siberia and the Far East. Tick-borne rickettsiosis is a febrile illness caused by a special type of rickettsia Rickettsiasibiricus. It is transmitted through the bites of tick Dermacentor, Haemaphysalis. The pathogen reservoir is small rodents: voles, chipmunks, ground squirrels. Since 1979, there has been an increase in the incidence of tick-borne rickettsiosis. Moreover, the incidence of tick-borne rickettsiosis in 1997 was 7.7 times higher than in 1979.

Conclusion: ticks are a carrier of various infectious diseases, so preventive measures should be taken regularly.

CYTOKERATINS IN THE DIAGNOSIS OF TUMOR DISEASES

Baldanova S. - the 2nd year student
Supervisors: Can. Biol. Sc. T.L. Ogorodnikova, O.I.Katina

Cytokeratins are structural proteins that make up the intermediate microfilaments of the cytoskeleton, characteristic of epithelial tissue cells. The term “cytokeratin” was introduced in the late 1970s when the protein from which intracellular intermediate filaments were built was

identified. In 2006, a new nomenclature of keratins was introduced, according to which proteins formerly called cytokeratins were recommended to be called as keratins, as well as hair and nail keratins similar to them. Nevertheless, in the biomedical literature there are more than 25 thousand publications that use the term “cytokeratin”. Cytokeratins are important markers for the classification of undifferentiated tumors. In the process of malignant transformation of cells, their expression increases.

Cytokeratins are important components of intermediate filaments that help cells to withstand mechanical stress. They form a large protein family, which is divided into two types according to their isoelectric point: acidic, with a relatively small molecular weight (for example, CK10, CK12, CK 13, CK14, etc.), and the main ones, whose molecular weight is usually slightly higher (e.g. CK1, CK2, CK3, CK4, etc.). A large number of cytokeratins is partially due to their tissue specificity. So, CK7 is usually expressed in the epithelium of the genitourinary ducts, and CK20 in the gastrointestinal tract.

Cytokeratins in the diagnosis of tumor diseases; in human neoplasms, certain patterns of expression of PF proteins have been established. Malignant tumors from the epithelium express cytokeratins, which are also detected in unchanged cells of the same histogenesis. Adenocarcinomas mainly express single-layer epithelial cytokeratins - CK8, CK18, CK19 and often CK7. In cells of transitional cancer and cancer from Merkel cells, the biochemical properties of normal cells are preserved and CK20 is detected. In anaplastic squamous cell cancer cells, CK5, CK6, CK14, CK16 and CK17 are found. Non-epithelial tumors are usually cytokeratin-negative.

Determining the content of cytokeratins in the patients serum or urine allows performing early diagnosis and monitoring the course of the disease, makes it possible to predict the development of metastases earlier than it is possible using conventional methods. It is a reliable additional indicator of the effective treatment of the disease and the basis for early decision-making.

NEUTROPHIL EXTRACELLULAR TRAPS

Kertik — ool A. — the 2nd year student
Supervisors: Can. Biol. Sc. Ogorodnikova T. L., Katina O.I.

Neutrophils are the largest group of white blood cells. They are an important component of the innate immunity and represent the first line of defense against infection by bacteria, fungi and protozoa. Neutrophils absorb and digest captured microorganisms using oxygen-dependent and oxygen-independent mechanisms, leading to their elimination. Phagocytosis and the secretion of antimicrobial substances from granules are not the only functions of neutrophils. In 2004, another mechanism for combating microbial invasion was discovered: the formation of neutrophil extracellular traps (NET — neutrophil extracellular traps).

The main components of extracellular neutrophil traps are DNA, histones, enzymes, and granule peptides such as elastase and myeloperoxidase. The process of NETs formation is called NETosis and can be caused by various inducers. After contact of the inductor with receptors on the cell membrane, a molecular cascade is activated, which leads to the release of calcium from

the endoplasmic reticulum, which in turn causes an increase in the activity of cytoplasmic deiminase PAD4. Along with this, chromatin condensation decreases. After a while, the neutrophils lose the heterochromatic regions of the nucleus, causing the nuclei to expand and become round. The nuclear envelope breaks down into vesicles, the membranes of granules and mitochondria are destroyed, which leads to a mixture of cytoplasm, karyoplasm and antibacterial peptides. The granule proteins are adsorbed on negatively charged fibrils of decondensed chromatin, which serves as the skeleton for the trap. Eventually, the cell membrane breaks and the contents of the cell are thrown out and unfold in space, forming a network of "trap", into which the bacteria fall. The neutrophil dies at the same time. At the moment, the process of granulocyte death differs significantly from apoptosis and necrosis. Studies have shown that the formation of networks is a controlled process, rather than the random release of granules and nuclear contents of the cell, as during necrosis or apoptosis. It is established that networks can be formed as an alternative to phagocytosis.

Neutrophil apoptosis is a strictly regulated response that seeks to prevent cell contents from entering the intercellular space. Netosis, on the contrary, is aimed at the controlled release of intracellular components of the granulocyte. During necrosis, the shell of the nucleus remains usually unchanged, while during the formation of the network, the nuclear membranes disintegrate into many cysts. As a result, the components of the core and granules are mixed.

The described mechanism is called suicidal NETosis (suicidal netosis). However, it is known that neutrophils can produce NET, isolating part of the nucleus or the nucleus as a whole, and not violate the integrity of the cell membrane. This mechanism is called vital NETosis (in vivo netosis). These two forms of the same process have significant differences. First, suicidal netosis is caused mainly by chemical stimulation of granulocytes and requires several hours for NET production, while in vivo netosis is activated when neutrophils are irritated by bacterial agents and takes less time. Secondly, vital NETosis does not lead to cell lysis, and it retains the ability to chemotaxis and phagocytosis. The third difference is in the mechanism of release of traps. As described above, in suicidal netosis, chromatin decondensation occurs, the nuclear envelope dissolves and the cell contents are ejected through perforation in the plasma membrane. During in vivo netosis, DNA is transferred from the nucleus to the extracellular space by means of vesicles. Vesicles with DNA, separated from the nucleus, pass through the cytoplasm and merge with the cell membrane, thereby ejecting DNA from the cell without perforating the membrane.

In General, during the formation of traps, antimicrobial components of neutrophils (microbicidal enzymes, antibacterial cationic proteins, neutral serine proteases, metalloproteinases, acid hydrolases, respiratory explosion products — hydrogen peroxide, hydroxyl radical, Halogens, atomic oxygen, nitric oxide, peroxynitrite and others, including myeloperoxidase) bind intracellularly to DNA strands neutrophils, and are secreted into the extracellular space, forming neutrophilic extracellular traps, limiting damage to nearby tissues. Bacteria are trapped in these structures and destroyed.

SURFACTANT

Elchin A. - the 2nd year student
Supervisors: Can. Biol. Sc. Ogorodnikova T. L., Katina O.I.

Surfactant is a mixture of surfactants lining the pulmonary alveoli.

Functions are reducing the surface tension of the film of tissue fluid covering the alveolar epithelium. That contributes to the straightening of the alveoli and prevents their walls from sticking together during breathing. Bactericidal property. Immunomodulatory function. Stimulation of alveolar macrophage activity. The formation of a decongestant barrier that prevents the penetration of fluid into the lumen of the alveoli from the interstitium.

The ways of surfactant synthesis. Methylation of phosphatidylethanolamine (kefalin) by methyltransferase (source of methyl group methionine); synthesis from cytidine diphosphatholine in the presence of phosphocholintransferase reacting with diglyceride.

The composition of the surfactant. Phospholipids: phosphatidylcholine. phosphatidylglycerol, phosphatidylinositol, phosphatidylethanolamine, sphingomyelin; Neutral lipids: Cholesterol, free fatty acids; Proteins: surfactant protein A, surfactant protein B, surfactant protein C, Surfactant protein D.

BILE

Kozlova A. — the 2nd year student
Supervisors: Doc. Med. Sc. Krasavina N.P., Katina O.I.

Bile is yellow, brown, or greenish, very bitter in taste with a specific smell. It is secreted by the liver and accumulates in the gall bladder. The formation of bile (choleresis) occurs continuously as a result of active and passive transport of substances in the blood.

The composition of bile includes various endogenous and exogenous substances. The percentage of water and dissolved substances is different at various stages of bile formation. The composition of the dissolved substances: 1) 65% - bile acids; 2) 20% - biliary phospholipids; 3) 5% - proteins; 4) 4% - cholesterol; 5) 0.3% - conjugated bilirubin; 6) 5.7% - various endogenous and exogenous substances.

Functions of bile: Bile acids contained in bile emulsify fats and participate in micelle formation, activate small intestine motility, stimulate the production of mucus and gastrointestinal hormones. Also, bile is involved in the discharge of excretory function.

The movement of bile in the ducts is due to the difference in pressure in its parts and in the duodenum, the state of the extrahepatic biliary tract sphincters. Pressure is made by secretory pressure of bile formation and contractions of smooth ducts and gall bladder.

The gall bladder is a hollow, pear-shaped organ attached to the lower surface of the liver. It can accumulate up to 30-50 ml of bile. The main functions of the gallbladder are the accumulation of bile, its concentration by absorption of water and its secretion in the digestive tract when a need arises.

Cholelithic disease (cholecystitis) is caused by the deposition of normal and pathological components of bile in the form of calculi. 80% of gallstones are cholesterol and mixed.

Gallstones can block the flow of bile and cause jaundice due to the destruction of tight joints around the bile capillaries.

About 80-90% of bile acids received with the flow of bile into the small intestine is absorbed into the blood and with the blood flow through the portal vein system enter the liver. The remaining 10-15% of bile acids is excreted from the body mainly with feces.

Diseases of the biliary system are found in more than 10% of the worlds population, and each decade the number of patients doubles. The incidence of biliary diseases increases with age. Violation of the normal functioning of the biliary system leads to the accumulation of toxic substances in the liver, as well as disruption of digestion.

HUMAN STEM CELLS: APPLICATION IN MODERN MEDICINE

Bogdanova D. — the 2nd year student
Supervisors: Can. Biol. Sc. Ogorodnikova T.L., Katina O.I.

Stem cells are immature cells that have the ability to self-renew, as well as differentiation.

The following types of stem cells are distinguished:

hematopoietic (in an adult, red bone marrow is used);

endothelial (located in the bone marrow);

nervous (in certain parts of the brain of a still ripening or already fully formed organism) myocardial stem cells (have the ability to transform into cardiomyocytes);

dermal (this type of stem cell is obtained from the skin of an embryo or an adult);

mesenchymal (stem cells taken from the bone marrow stroma, and also found in blood obtained from the umbilical cord);

muscular (the source of the material is the striated muscle tissue, and can also be obtained from the umbilical cord blood or the patients own bone marrow);

embryonic (the source is fetal material taken in the first week of fetal development).

The use of stem cells in medicine:

neurology (treatment of the consequences of injuries of the brain and spinal cord, stroke, coma, neurodegenerative diseases);

cardiology (treatment of atherosclerosis, coronary heart disease and the consequences of myocardial infarction);

endocrinology (treatment of insulin-dependent diabetes, consequences of ovariectomy);

diseases of the musculoskeletal system (repair of bones, bone plate, treatment of myopathies, the effects of trauma, scar adhesions);

hepatology (treatment of hepatitis, cirrhosis);

hematology (treatment of hemoblastosis, acute leukemia, chronic myelogenous leukemia, myeloma);

gerontology and geriatrics;

cosmetology (treatment of baldness, skin scars, wrinkles, pigmentation, traces of chemical burns, spots left after acne, effects of laser therapy).

THE FIRE ON THE TANKER AT THE MAKHACHKALA 11.06.2019

Suleimanova E., Morozov D. — the 2nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

At 4:26 am the message on explosion in the engine room of the tanker No. 16 was received. At this moment there was a pumping of oil from the vessel. In the engine room "there was a cotton followed by fire", which led to smoke residential superstructure of the tanker. Three people were killed and three more were hospitalized with burns. The Department of emergency situations reportered that there was no threat of oil spill in the sea. Later the press service informed that at 12:30 the fire on the tanker was completely liquidated.

CONGENITAL TOXOPLASMOSIS

Dunnikova N. — the 1st year student
Supervisors: Doc. Med. Sc. Gordienko E.N., Katina O. I.

Toxoplasmosis is an important medical problem of serious socio-economic importance. Interest in toxoplasmosis is determined by severe damage of the fetus, a chronic course with life-long preservation of the parasite in various organs and tissues, as well as the possibility of adverse perinatal outcomes.

Congenital toxoplasmosis is an acute or chronic disease of the newborn that occurs when the fetus is infected with toxoplasma during fetal development with a long, often chronic, course. It is characterized by the lesion of the central nervous system, eyes, liver, spleen and other organs.

The causative agent of the disease - Toxoplasma gondii - belongs to the class of sporozoans, the order of coccidia, the genus of toxoplasma, is an intracellular parasite. The fetus is contaminated only if the woman becomes infected during pregnancy. Antibodies circulating in the body of a woman before the pregnancy provide reliable protection of the fetus from infection. The clinical course varies, and not all fetuses from the same pregnancy become infected with toxoplasmosis.

Toxoplasmosis is widespread among animals and humans throughout the world. The disease is most common in European countries and most in France (55%). A person is contiminated with toxoplasma by eating raw or poorly heat-treated meat, as well as food and raw water contaminated with parasite cysts. About 1% of the population is infected with toxoplasmosis annually.

In the Republic of Belarus, in the last 5 years, toxoplasmosis has been serologically determined in pregnant women and newborns in 22.4-26.8% of cases. Every year three to five newborns are diagnosed with congenital toxoplasmosis with a fatal outcome.

Chronic toxoplasmosis is a great threat to pregnant women, since transplacental infection can lead to premature birth, fetal death, development of deafness, blindness, psychophysical development retardation, cerebral palsy, microphthalmia, hydrocephalus, microcephaly, microgyria, false porencephaly. When a pregnant woman is infected in the first trimester, spontaneous abortion is possible. The probability of infection of the fetus is not more than 15%, but the severity of neurological defects and the risk of chorioretinitis in the fetus are higher if the infection occurred in a woman in the first trimester of pregnancy.

Thus, parasitic protozoa pose a serious danger to the body of a woman and the fetus during pregnancy. Parasites have embryotoxic, fetotoxic and teratogenic effects on the embryo or fetus, disrupting its development or causing death.

GREAT ADAPTATION TO PARASITISM ON THE EXAMPLE OF CLONORCHIS

Kucherenko A. — the first year student
Supervisors: Doc. Med. Sc. E. N. Gordienko, O.I.Katina

A special case of parasitism was studied on the example of the Chinese sucker with a detailed study of the biology of the parasite, the life cycle within the natural focus. Parasitism is a form of cohabitation of two or more genetically heterogeneous organisms of different species, in which one organism (parasite) uses another (host) as a source of food and environment, causing harm to it, but, as a rule, not destroying it.

We were interested in the signs of adaptation to parasitism, formed in the process of evolution, allowing the clonarch to choose an ecological niche that facilitates their existence, development and reproduction in the specific conditions of the host organism and the natural conditions of the habitat. The best example of a magnificent adaptation to parasitism is the Chinese sucker (Clonorchis sinensis) - the causative agent of clonorchosis.

Cloner refers to a type of flatworm, class Trematodes. Clonorchis features of adaptation to parasitism are: body shape, organs of fixation, the senses as separate stages of development, peculiarities of structure of the reproductive system and fertility. The body shape of this parasite is streamlined, reminiscent of a bottle-the front end of the body is thin, and the rear is rounded. Body length of clonorchis is in the range of 10-20 mm and width 2-4 mm. Such a structure of the body facilitates its existence in the bile ducts of the liver in the body of the definitive host. Clonorchis senses are 2 simple eyes and the lateral papillae, which protrude outwards. It is important to note the presence of photoreceptors, which appear at the stages of cercaria, myracidium and are reduced in Marita-an adult one. Especially eyes are needed at the stage of cercaria, with the help of which the parasite searches for a second intermediate host. And due to the organ of movement, the fin, it quickly reaches its goal. Organs of fixing in clonorchis are two suckers: oral and peritoneal. With their help, cloner attached to the walls of the bodies of their host and through oral sucker it feeds.

In the body of the final host (carnivores and humans), clonorhis is localized in the bile ducts of the liver, gall bladder, in the excretory ducts of the pancreas.This choice of habitat in the body of the final host is associated with an acidic environment in which it can live up to 25 years or more.

The most important adaptation to the parasitism is features of the structure of the reproductive system of clonorchis and its enormous fertility. As most flukes, the Chinese Fluke is a hermaphrodite. Huge fertility is the most adaptive and the most dangerous symptom, than has Cloner. These worms produce an enormous number of eggs and have the ability to reproduce in the larval stage parthenogenetically. As a result, all the offspring of an adult worm is calculated by astronomical numbers. The great fertility provides them with great opportunities to

settle on their hosts and creates a threat of invasion for definitive hosts, which is the man. This is a biological and medical problem relevant for the far Eastern region.

EPIPHYSIS IN THE LIGHT OF NEW DISCOVERIES

Chernomorcev I. - the 2nd year student
Supervisors: Doc. Biol. Sc. Batalova T.A., Katina O.I.

Descriptions of the pineal gland date back to antiquity, but its functions in humans are still poorly understood. It is believed that the epiphysis was first described by the Alexandrian physician Herophilus 300 years BC.

In both diurnal and nocturnal vertebrates, its main product, the hormone melatonin, is synthesized and secreted rhythmically during the dark part of the day-night cycle.

Some types of primary insomnia are explained by a decrease in the production of melatonin, especially in the elderly. The introduction of melatonin also has a moderate hypothermic and hypotensive effect. The rapidly expanding literature suggests the involvement of melatonin in immune function, while high levels of stimulation and low levels inhibit a number of parameters of the immune system.

Finally, there are reports of abnormal daily profiles of melatonin in a number of psychiatric and neurological disorders, but the significance of such deviations is far from clear.

FRONTAL SYNDROME WITH LESIONS OR ABNORMALITIES OF THE FRONTAL LOBES

Chernomorcev I. - the 2nd year student
Supervisors: Can. Med. Sc. Seliverstov S.S., Katina O.I.

Anomalies of the development of the frontal lobes are uncommon. There are no certain statistics, since often the data are combined with anomalies of other parts of the brain and it is not always possible to study this pathology.

Often there is an underdevelopment of the frontal lobes - which entails a certain clinical picture. In the study of such children, a gross peculiar violation of motor skills is revealed. Their movements are clumsy and awkward. Such children do not know how to serve themselves. Some have noted such drastic changes in gait that we can talk about walking apraxia. These children have peculiar behavioral changes. They are uncritical, deprived of elementary forms of shyness, not offensive and underestimate the situation. Their behavior is devoid of persistent motives. In other words, with this variant of the defect, the regulatory function of speech turned out to be especially impaired. This function of speech is associated with the formation of the emotional-volitional sphere of the personality as a whole.

HISTOPHYSIOLOGY OF THE SKIN IN NORMAL AND SQUAMOUS CELL CARCINOMA

Mankov D. — the 2nd year student
Supervisors: Kozlova V. S., Katina O.I.

The relevance of studying the structure of the skin and its pathologies is the most important as due to its multifunctionality, a large number of various harmful agents that cause skin pathologies affect the skin.

The skin is the largest holistic multifunctional organ interconnected with all other organs and systems of the body.

The skin consists of three components:

epidermis (epidermis);

dermis (dermis);

subcutaneous fat (subcutis), or hypodermis (hypodermis).

Also, a large number of muscle, nerve, blood, lymphatic elements lead to the skin. They help it to perform certain functions and ensure its vital activity.

The skin also has its own derivatives represented by sweat, sebaceous glands, and nails.

This was a normal description of the skin. Now is the observation of one of its pathologies: squamous skin carcinoma.

Considering this pathology there will be described:

reasons for the development of pathology;

classification;

histology in squamous cell carcinoma of the skin;

diagnosis of oncology;

prognosis of the disease.

FIRE IN A TENT CAMP IN KHABAROVSK KRAI

Mankov D. — the 2nd year studebt
Supervisors: Can. Biol. Sc. Guba L.A., Katina O.I.

On July 3, in Khabarovsk Krai at a children's camp near the Holdomi ski resort was a fire.

There were 189 children aged 7 to 15 years in the camp. The fire in the camp began on the night of July 22-23.

Officially, the cause of the fire is not called. But according to one version, the fire spread from a faulty heater.

The fire was localized in twenty minutes. For this time the fire completely destroyed 20 tents and damaged six more. All of them were tents in which the children slept.

A ten-year-old girl died on the spot, three more children were taken to the intensive care unit of the Central District Hospital of the Solnechny District. Their condition was immediately assessed as extremely grave. A few hours later they fell into a coma.

According to the latest data from the press service of the regional government, five adults and three children were injured in the fire, four children died.

HEMOLYTIC-UREMIC SYNDROME IN INFECTOLOGY

Zaitseva O. - the 5-th year student
Supervisors: Soldatkin P.K., Kostina V.V.

Hemolytic uremic syndrome (HUS) is one of the main forms of thrombotic microangiopathy - a clinical and morphological syndrome, which is a special type of vascular lesion of the microvasculature with the development of thrombosis and inflammation of the vascular wall. HUS is characterized by a triad of symptoms: Coombs-negative hemolytic anemia with the presence of fragmented red blood cells (schizocytes), thrombocytopenia and acute renal failure, and it is one of the most common causes of its development in children.

The most common etiological factor for HUS is E. coli, which produces a Shiga-like toxin and, first of all, its serotype 0157: H7. The natural reservoir of E. coli 0157: H7 is cattle, goats and sheep. Human infection occurs when contaminated, undercooked meat, unpasteurized milk or dairy products, water, fruits or vegetables are consumed. Secondary transmission of infection from person to person is also possible.

During the disease three periods are distinguished: prodromal (1-14 days), peak (1-3 weeks), final (recovery or death). The prodromal period proceeds as an acute gastrointestinal or acute respiratory disease. The height of the disease is characterized by the development of hemolytic anemia, hemorrhagic syndrome with thrombocytopenia, neuropsychiatric disorders and kidney damage.

The clinical picture of HUS is manifested by a deterioration in the general condition, an increase in lethargy and pallor of the skin. Neurological disorders are detected in half of the children. Causes: increasing uremia or diffuse capillary thrombosis of cerebral vessels with edema. Changes in the cardiovascular system are manifested by tachycardia, muffled heart sounds, systolic murmur, extrasystoles are possible.

ORGANIZATION OF GERIATRIC CARE IN THE AMUR REGION

Guro P., Zaytseva O. — 5- th year students
Supervisors: Can. Med. Sc., Assoc. Prof. Sundukova E.A., Kostina V.V.

Geriatrics is a field of clinical medicine that studies diseases of elderly and senile people, developing methods of their treatment and prevention. Geriatric service is focused on improving the quality of life of older people, preserving their ability to self-care, reducing the risk of disability or its progression.

Geriatric service in the Amur region is regulated by many legal acts. Medical care in the profile of "geriatrics" is provided on an outpatient basis in 22 medical organizations of the region. The first geriatric doctor in the Amur region began working in December 2016 in the State Autonomous Health Department of the Amur region "City polyclinic No. 2" of Blagoveshchensk.

In April 2016, there were introduced the position of chief non-staff specialist in geriatrics, Ministry of Health and also there was developed an action Plan for the development of geriatric services in the Amur region for the years 2016-2020, providing training of doctors in primary

care in "geriatrics" as well as nurses in the direction of "nursing in geriatrics". In the period from 2016 to 2019, doctors were trained in the number of 23 people, nurses - 18 people.

It is planned to open 7 geriatric doctor's offices in the Amur region in 2019- in Svobodniy, Arkhara, Zeya, Belogorsk, Mikhailovka, Mazanovo and in Amur region hospital in Blagoveshchensk, and in 2020 - the creation of an inpatient service. The whole process of formation of gerontological care is designed until 2024.

EXPLOSIONS IN A MILITARY WAREHOUSE WITH AMMUNITION IN ACHINSK

Karpenkova P., Kuzmina A. — the 2-nd year students
Supervisors: Can. Biol. Sc. Guba L.A., Kostina V.V.

On August 5, 2019, there were explosions on the territory of a military unit in Achinsk. Ammunition ignition occurred there. One person died and 20 were injured. 16.5 thousand inhabitants were evacuated.

On August 9, 2019, the explosions resumed. 11 people were injured. The reason for the resumption of explosions is the detonation of a shell during demining operations.

NOOTROPICS DRUGS

Sharvadze T. — the 3-rd year student
Supervisors: Doc. Med. Sc., Prof. Dorovskikh V. A., Kostina V. V.

Nootropics (colloquial: smart medicine and cognitive enhancers) are drugs, supplements and other substances that may improve cognitive function, particularly executive functions, memory, creativity, or motivation in healthy individuals.

In 1964 the Belgian pharmacologists S. Giurgea and V. Skondia synthesized the first drug of this group — piracetam. In 1972 the term nootropics was proposed by C. Giurgea to refer to a group of drugs that improve intellectual memory, attention, learning and provide a characteristic stimulating effect on transcallosal potential. The therapeutic effect of nootropic drugs is based on several mechanisms: improvement of the energy state of neurons (increased ATP synthesis, antihypoxic and antioxidant effects); activation of plastic processes in the central nervous system by enhancing the synthesis of RNA and proteins; strengthening synaptic transmission processes in the central nervous system; improved glucose utilization; membrane stabilizing effect. In the spectrum of clinical activity of nootropics, the following claimed main effects are distinguished: Nootropic effect. Mnemotropic action. Increase of the level of wakefulness, clarity of consciousness.

Adaptogenic action. Antiasthenic effect and much more. Nootropic drugs are used in Russia under the following conditions: dementia of various origins (vascular, senile, with Alzheimer's disease), chronic cerebrovascular insufficiency, psycho-organic syndrome, with the consequences of cerebrovascular accident, traumatic brain injury, intoxication, neuroinfection, intellectual and mnestic disorders (impaired memory, concentration of attention, thinking), asthenic, astheno-depressive and depressive syndrome, neurotic and neurosis-like disorder, vegetovascular dystonia, chronic alcoholism (encephalopathy, psycho-organic syndrome,

withdrawal symptoms), as well as to improve mental performance. In pediatrics, reasonable indications for the appointment of nootropics are retardation of mental and speech development, mental retardation, consequences of perinatal damage to the central nervous system, cerebral palsy, attention deficit disorder.

FOOD POISONING OF MICROBIAL ORIGIN

Ignatova I., Motalygina A — the 3-rd year students
Supervisors: Doc. Med. Sc., Prof. Korshunova N.V., Kostina V.V.

Food poisoning of bacterial origin occur by type of toxicoinfection and toxicosis (intoxication). Food toxicoinfections occur when eating food containing massive amounts of living microorganisms that have multiplied in it. Food toxicosis is associated with the action on the body of toxins (exotoxins) of some microorganisms that have multiplied in food.

Contamination of food by microorganisms and their toxins occurs in various ways. Products can be contaminated due to sanitary and technological violations of production, transportation, storage and sale of products. Products of animal origin can be affected during the life of the animal. However, eating food contaminated with microbes does not always cause food poisoning. The product becomes the cause of the disease only with a massive multiplication of microorganisms in it or a significant accumulation of toxins. This explains the greatest number of food poisoning in the warm period of the year, when optimal conditions for the development of microorganisms are created.

Based on the patterns of distribution and occurrence of food diseases, their prevention in the food industry is reduced to three main groups of measures: prevention of food contamination by pathogens; creation of conditions limiting the vital activity of food poisoning agents; provision of conditions detrimental to the causative agent of food diseases.

Practice has shown that the strict implementation of the complex of veterinary-sanitary and sanitary-hygienic measures at all stages of food processing — from receipt to implementation — protect food from contamination by pathogenic microorganisms, and the widespread use of cold storage and heat treatment products create conditions that limit the growth of microorganisms or cause their death.

PHARMACOTHERAPY OF GLAUCOMA

Ignatova I. — the 3-rd year student
Supervisors: Can. Med. Sc., Assoc. Prof. Tikhanov V.I., Kostina V.V.

Glaucoma is the leading cause of blindness and low vision in the world. Glaucoma affects up to 105 million people; 5.2 million people have blindness in both eyes. In Russia, glaucoma is the main cause of visual disability (Libman E. S., 2005; World Health Organization, 1997).

Based on the analysis of the results of international and Russian clinical studies in the field of drug management of patients with glaucoma, it was concluded that it is necessary strive to reduce intraocular pressure (IOP). Drugs that reduce IOP and are used for the treatment of

glaucoma can be divided into two groups according to their effect on the hydrodynamics of the eye: drugs that improve the outflow of intraocular fluid from the eye, and drugs that inhibit the production of intraocular fluid.

A rational approach to the hypotensive treatment of glaucoma is determined by the clinical form of the disease and the individual characteristics of the patient.
In Russia (Russian glaucoma society) the first choice drugs are: prostaglandin F2h analogues: latanoprost and travoprost; beta-blockers timolol; m-cholinomimetic pilocarpine.

The second choice drugs include: $beta_1$-betaxolol adrenoblocker; the carbonic anhydrase inhibitor brinzolamide; ALPHA2-adrenomimetic clonidine; To reduce the likelihood of tachyphylaxis, it is advisable to replace drugs with second-choice drugs annually for 2-3 months. Temporary replacement of one drug with another allows to preserve its hypotensive effect.

DRUGS USED IN OBESITY

Karelov M. - the 3-rd year student
Supervisors: Doc. Biol. Sc., Assoc. Prof. Simonova N.V., Kostina V.V.

Obesity drugs are pharmacological agents that reduce or control weight. They change one of the main processes in the human body, namely the regulation of weight by changing appetite, metabolism or calorie absorption. The main principles of treatment of excess weight: adherence to the correct diet and exercise. The inevitable and painful feeling of hunger can be associated with a bad habit of overeating, insufficient amount of low-calorie food with fiber or lack of movement. Only if this general approach is ineffective, go to drug treatment. Due to the likelihood of side effects, it is recommended that a doctor prescribe anti-obesity drugs when he estimates the benefit of such treatment exceeds the possible risk.

The effect of drugs for the treatment of obesity is revealed by several mechanisms: appetite suppression; fixed assets are catecholamines and their derivatives (amphetamine-based assets); drugs that block cannabinoid receptors may be the strategy of the future for appetite suppression; increased metabolism in the body.

ATRIAL FIBRILLATION AS A CAUSE OF ISCHEMIC STROKE

Karelov M., In San Dok — the 3-rd year students
Supervisors: Can. Med. Sc. Sklyar I.V., Kostina V.V.

Atrial fibrillation (AF) is the most common heart rhythm disorder. The prevalence of AF in the General population is 1-2%, and increases with age from 0.5% at the age of 40-50 years old up to 5-25%, at the age of 40-70 years old and up to 50% - over 70 years old. The diagnosis of AF was established on the basis of objective data, the results of electrocardiography (ECG), Holter ECG monitoring, clinical diagnosis in the discharge epicrisis. Valvular heart defects were not found in the history. The results of numerous studies showed that arterial hypertension (AH) is a risk factor (FR) for the development of atrial fibrillation. Our study revealed a 100% relationship between the presence of AH and AF. Thus, the results of our study showed that primary and secondary prevention of ischemic stroke in patients with atrial fibrillation is not enough. Patients with atrial fibrillation, especially associated with hypertension, need regular dynamic monitoring and treatment at the outpatient stage.

ACTION OF MEDICINES IN CRITICAL PERIODS OF EMBRIOGENESIS

Ozerova Yu., Sushitskaya A. - the 3-rd year students
Supervisors: Doc. Biol. Sc., Prof. Simonova N.V., Kostina V.V.

Taking medications during pregnancy can lead to undesirable consequences and complications in the formation and development of the fetus. The use of drugs in critical periods of embryogenesis is especially dangerous.

The period preceding conception. During this period, the greatest danger is the reception, shortly before conception (not only by a woman, but sometimes by a man) of drugs capable of cumulation. These substances can continue to circulate in the mother's body during organogenesis. For example, congenital malformations are described in children whose mothers completed the course of treatment with retinoids before conception.

From the moment of conception to the 11th day. During this period, the embryo responds to adverse effects on the principle of "all or nothing": it either dies or survives without any damage. It is during this period when high resistance to birth defects is observed.

From the 11th day to the 3rd week. After the 11th day, organogenesis begins, therefore this period is most dangerous from the point of view of the formation of congenital anomalies, and the administration of drugs is especially undesirable. It is believed that the period when drugs can cause a teratogenic effect is very short - from 31 up to 81 days after the last menstruation. Since all the medicines taken orally enter the bloodstream of the fetus, none of them can be considered absolutely safe during this period.

From the 4th to the 9th week. During this period, drugs usually do not cause serious birth defects, but can interfere with the growth and functioning of normally formed organs and tissues.

From the 9th week before delivery. During this period, structural defects, as a rule, do not occur. There can be a violation of metabolic processes and postnatal functions, including behavioral disorders.

In general, the appointment of drugs during pregnancy should be carried out only by a doctor strictly according to indications, taking into account an adequate assessment of the benefits of the therapy and the possible risk of complications for the unborn baby.

CAUSES OF DEATHS OF PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA

Sudnikova A. — the 3-rd year student
Supervisors: Can. Med. Sc. Sklyar I.V., Kostina V.V.

Community-acquired pneumonia (CAP) remains one of the leading causes of morbidity, hospitalization and mortality, being a persistent and very complex health problem in both industrialized and developing countries. The most difficult of VP occur in elderly with vozrastalo of our study was to investigate the reasons of lethal outcomes in the CAP.

A retrospective analysis of 26 case histories of patients who were treated in the pulmonology department of CAHD "Blagoveshchensk city clinical hospital" and died from CAP was carried out. All analyzed cases of fatal outcomes were subjected to pathologic examination.

CAP was the most common cause of death in men (80.8%) aged from 21 up to 75 years old. The average age was 57.4±1.1 years old, among which men of working age (53.7%)

predominated. In 19.2% of cases pneumonia was observed in women from 21 up to 78 years old. The median age was 64.5±2.3 years old. There were 2 women of working age (31.3%). More often patients died before 1 day and in the first 3 days of stay in a hospital-53,8%. The average length of stay of patients in the hospital was 6 beds / days.

Upon admission complaints were: fever 20 (76.9%), cough with sputum purulent character 17 (65.4%), shortness of breath (42.3%), chest pain associated with breathing 7 (26.9%), severe weakness 10 (38.5%) patients. In the elderly, weakness, shortness of breath were observed more often.

The results of the analysis showed that the causes of death in CAP were severe pneumonia, extensive lesions of the lung tissue, comorbidities (COPD, CHF, diabetes, alcoholism), late treatment for medical help.

MEDICINAL CARCINOGENY

Sudnikova A.— the 3-rd year student
Supervisors: Doc. Biol. Sc., Assoc. Prof. Simonova N.V., Kostina V.V.

Carcinogenesis caused in humans by drugs (i.e. iatorogenic cancer) is a relatively new area of oncology, the emergence of which is associated with the introduction into medical practice of strong cytostatic and immunosuppressive drugs, used to treat mainly malignant tumors and, as a rule, having, in addition to carcinogenic, strong mutagenic action. More recently only arsenic was known as a medicinal carcinogen, today the number of medicinal carcinogens tends to grow steadily.

In the case of treatment of malignant diseases, we are talking about the development of a second primary tumor, causally associated with the used drug. Chlorambucil was used to treat lymphoma, chronic leukemia, ovarian cancer; as the second tumor acute non-lymphocytic leukemia (ONL) was the most often. It is significant that the occurrence of acute leukemia was observed in children treated with this drug for glomerulonephritis and arthritis, as well as in patients with true polycethema. Cyclophosphamide was used to treat lymphoma, myeloma, breast cancer, ovarian, lung, and chronic diseases (rheumatoid arthritis, chronic glomerulonephritis, etc.). The use of this drug is associated with the development of a variety of tumors, bladder cancet and ONL often. The development of acute leukemia has been observed in patients treated with melphalan for myeloma or ovarian cancer or myleran for lung cancer or true polyceria. In patients who took treosulfan for ovarian cancer, the frequency of ONL was 175 times higher than expected. Abuse of analgesic mixtures containing phenacetin is also dangerous for complications and leads to a statistically significant increase in transient cell carcinoma, especially in women. The use of conjugate estrogen as a postmenopausal replacement therapy is associated with an increase in endometrial cancer in the United States. A few years after the end of the widespread use of estrogen, the incidence of cancer began to decrease. Young women whose mothers used DES during pregnancy had a significant increase (approximately 1/1000) of light cell cancer of the vagina. Treatment of methoxydale psoriasis in combination with long-wave AFL in some cases leads to the development of skin cancer.

Thus, the carcinogenicity of a number of drugs is undeniable. To date, the ability to cause tumors in humans in more than 30 medicines has been proven.

ERRORS IN THE TREATMENT OF PURULENT DISEASES OF THE HAND

Sudnikova A. — the 3-rd year student
Supervisors: Doc. Med. Sc., Prof. Volodchenko N.P., Kostina V.V.

Acute purulent diseases of the hand (APDH) in surgical practice occupy one of the leading places. Frequency panaritium and phlegmons of hand ranges from 15 - 18% up to 20 — 30.

We analyzed the results of treatment of 153 patients in the surgical department of the MHD "Blagoveshchensk city clinical hospital" for the last five years.

The age of the patients ranged from 19 up to 78 years old. Nosological structure: subcutaneous panaritiums ,tendon and bone joint ,phlegmons of the hand.

The reason for the unsatisfactory treatment of patients were medical errors, errors in the implementation of anesthesia, errors in the choice of surgical access. A typical surgical error in autopsy of a panaritium is the use of small incisions that do not provide good drainage of the wound.In our observations there were patients (2) with small incisions on the palmar surface of one phalanx of fingers and palmar phlegmon. Mistakes under draining wounds were in of using gauze turundes (5 patients) rubber stripes (7 patients).

Modern principles of treatment of purulent diseases of the hand provide for the implementation of radical necr (sequester)ectomy with the imposition of drainage and washing systems and (according to indications) primary sutures.

Errors during immobilization. Erroneous immobilization of the entire hand with the defeat of one finger or not performing immobilization at all.

Antibiotic therapy errors: widespread, without proper indications, the use of antibiotics; the use of small or large doses; their appointment without regard to sensitivity; appointment without regard to interaction.

Complications of treatment occurred due to the concomitant pathology of patients. From 16 patients in 3 in there were diagnosed type 2 diabetes, cirrhosis of the liver-1. IHD, postinfarction cardiosclerosis-in 2, etc.) Thus, the main causes of unsatisfactory outcomes of treatment of purulent diseases of the hand are medical errors at various stages of treatment of patients and concomitant severe diseases.

ANTI-INFLAMMATORY DRUGS IN THE TREATMENT OF BRONCHIAL ATHMA

Nikonova Yu. — the 3-rd year student
Supervisors: Doc. Biol. Sc., Assoc. Prof. Simonova N.V., Kostina V.V.

One of the pathogenetically substantiated approaches to the treatment of bronchial asthma is the appointment of anti-inflammatory drugs. The anti-inflammatory drugs used in bronchial asthma are divided into two groups: drugs that inhibit the activation and release of mediators from inflammatory cells (primarily from mast cells and eosinophils), and steroidal anti-inflammatory drugs (glucocorticosteroids).

Inhibitors of mediators exit from inflammatory cells

Sodium cromoglycate (intal) was the first anti-inflammatory drug administered by inhalation. Along with this, it prevents post-load bronchospasm, reduces the hyperreactivity of the bronchial tree. The greatest efficacy was noted in patients with atopic (allergic) form of bronchial asthma, however, the drug has a positive effect in non-allergic forms of the disease.

Nedocromil sodium (tiled) is a relatively new anti-inflammatory drug. In most cases, tailed makes it possible to abandon bronchodilators, and in patients with severe course, reduce the dose of corticosteroids, especially when inhaled.

Ketotifen (zaditen) is effective only in a small part of patients with bronchial asthma, mainly when combined with extrapulmonary manifestations of allergies (allergic rhinitis, conjunctivitis, urticaria, atopic dermatitis, nutritional allergies).

Glucocorticosteroids

Beclomethasone is approved for the treatment of children after 4 years. The drug is administered 2 to 4 times a day. Most of the preparations based on beclomethasone is produced in the form of an aerosol: beclazone, alcedin, maple, becotide, becodisk, beclodget. Used with caution for the treatment of pregnant women, patients with cirrhosis, epilepsy, osteoporosis, and brain disorders.

Budesonide is an effective anti-inflammatory agent that is 3 times superior in its severity of effect of beclomethasone. The active substance is rapidly absorbed into the liver, which reduces the risk of adverse reactions. The minimum dosage is allowed for pregnant and lactating women, children over 6 months.

Fluticasone propionate is today one of the most highly active drugs. The equivalent therapeutic doses of fluticasone are almost half that of beclomethasone and budesonide in an aerosol inhaler. Fluticasone propionate inhibits the adrenal glands more.

In general, a correctly selected anti-inflammatory drug implies an increase in the effectiveness of the treatment of bronchial asthma and the prevention of bronchial obstructive syndrome.

MELANOMA

Gulyaev A. -the 3-rd year student

Supervisors: Can. Med. Sc. Levchenko N.R., Kostina V.V.

Melanoma is a malignant tumor that develops from pigment cells producing melanin. Most it is localized in the skin, less often in the retina, mucous membranes. The leading risk factor is ultraviolet radiation, a history of sunburn, heredity, and age.

Skin melanoma is the most common type of melanoma. It is located on any part of the skin and disguises itself as a mole. The following options are distinguished: Superficially spreading - it affects the surface of the skin; nodular - is presented in the form of a node that rises above the surface of the skin; The stage of the disease is established on the basis of a histological study of distant education and examination data: stage 0 - the tumor is localized in the epidermis; stage 1 - the tumor is more than 1 mm thick, having an expression of more than 2mm; stage 2 - the tumor is more than 2 mm of thickness, having an expression of more than 4 mm; stage 3 - the defeat of regional lymph nodes; stage 4 - the appearance of metastases in distant lymph nodes and organs

RABIES IN OUR DAYS

Gulyaev A. — the 3-rd year student
Supervisors: Doc. Med. Sc., Prof. Chubenko G.I., Kostina V.V.

Rabies is a typical zooanthroponic disease. It is caused by rhabdoviruses belonging to the family Rhabdoviridae, genus Lyssavirus. According to the World Health Organization (WHO), about 60 thousand people die annually from rabies in the world (about 34 thousand people are in Asia), 4 out of every 10 people bitten by dogs with suspected rabies are children under the age of 15 years old.

The source of infection is wild and domestic animals, mainly dogs, wolves, foxes.
The rise in the incidence of rabies in Russia began in the 90s. last century. If in 1996 the number of sick animals was 1879, then in 1998 2868 animals got sick. According to the Rosselkhoznadzor, only in January - February 2018, 578 cases of rabies in animals were recorded. Quarantine has been announced in some areas of the Moscow Region, Belgorod and Lipetsk regions, Tatarstan and other regions.

The urban population also has a risk of infection. About 400 thousand people turn to animal bites annually in the Russian Federation, of which about 250 thousand need specific anti-rabies treatment about 40 thousand people in Russia are vaccinated annually against this infection

Rabies is a dangerous zooanthroponic disease that requires the presence of rabies serum in each medical prophylactic institution.
Six injections are required for vaccination, but it happens that less.

THE HEALTH CONDITION OF CHILDREN DURING THE FIRST YEAR OF LIFE, BORN FROM MOTHERS WITH BRONCHIAL ASTHMA

Blagova Zh. — the 6-th year student
Supervisors: Doc. Med. Sc., Prof. Prikhodko O.B., Can. Med. Sc. Kostrova I.V., Cand. Med. Sc. Goryacheva S.A., Kostina V.V.

The aim of the work is to study the frequency and structure of allergic morbidity in of children (during the first year of life), born from mothers with bronchial asthma (BA). Materials and methods. The observation was conducted in 98 children from mothers with BA. The comparison group consisted of 70 children of the same age, born from mothers without bronchopulmonary pathology. In order to value the impact of the level of motherss BA control during pregnancy on the health of children of the 1 year of life, there were made 2 groups of children. Group I - 55 children from mothers with uncontrolled BA, group II - 43 children from mothers with partially or fully controlled BA. Results and discussion. 36 (36,7%) of children were born by caesarean section. 42 (76,3) children from the I group and 14 from the II (32,5%) were discharged from the maternity hospital with cerebral ischemia I-III severity; with the implementation of intrauterine infection (IUI) - 15 children of group I (27,3%) and 8 of II (18,6%). The combination of cerebral ischemia and IUI was observed in 15 (2,3%) of children in group I and 7 (16,3%) of children in II. In the comparison group, these data were 20% and 23,3%, without combined conditions for these diseases. 3 children (5,5%) of group I and 6 children (13,9%) of group II were considered healthy. Throughout the 1 year of life, the

following conditions were noted more often than others: hyper-excitability - in 12 (21,8%) children of group I and 7 (16,3%) of group II, hypertension syndrome, respectively, in 8 (14,5%) and in 2 (4,5%), syndrome of motor disorders - in 11 (20%) and in 5 (11,6%), vegeto-visceral dysfunctions - in 10 (18,2%) and 4 (9,3%) children. The delay in physical development was observed in 9 (16,4%) children of the I group and 3 (7,0%) of the II. Throughout the 1 year of life, 56 (57,1%) children from mothers with BA showed signs of allergic diathesis. Most often, children had atopic dermatitis (54,1%) of mothers with BA and in 25,7% in the comparison group. There were better conditions for the development of the fetus, the health of the newborn and the child of I year of life with controlled BA than in the absence of disease control. At the same time, cerebral ischemia was observed 2 times less often, 1,7 times less often - its combination with IUI, 1,9 times less often - delayed physical development.

ANTITUMOR DRUGS

Gulyaev A. — 3-rd year student
Supervisors: Can. Med. Sc., Assoc. Prof. Tikhanov V.I., Kostina V.V.

Antineoplastic drugs (anti-blastoma drugs) are drugs that disrupt the development of true tumors. According to the international anatomical-therapeutic-chemical classification, they are assigned to the L-group.

L01A Alkylating antineoplastic drugs are chemotherapeutic antitumor cytostatic drugs whose mechanism of action is based on the attachment of an alkyl group to DNA and, as a result, violation of the DNA structure and the inability for a malignant cell to share, to carry out mitosis. In its turn triggers the apoptosis mechanism in the damaged cell. L01B Antimetabolites are cytostatic antitumor chemotherapeutic drugs whose mechanism of action is based on the inhibition of certain biochemical processes critical for the propagation of malignant tumor cells, i.e. for the process of division, mitosis, and DNA replication. L03 Immunomodulators - a group of substances that can exert a regulatory effect on the immune system. By the nature of their influence on the immune system, they are divided into immunostimulating and immunosuppressive. Immunostimulants - substances that stimulate nonspecific body resistance and immunity. L04 Immunosuppressants are a class of drugs used to provide artificial suppression of immunity.

HISTORY OF DEVELOPMENT OF HIV IDENTIFICATION METHODS

Mitina T. — the 3-rd year student
Supervisors: Can. Med.Sc. Bubinets O.V., Kostina V.V.

40 years have passed since the first detection of the human immunodeficiency virus. Then no one knew that it would not only become a threat to humanity, but would also grow into a global epidemic. As we already wrote in the material on the history of AIDS, only in 1985 it was established how HIV infection is transmitted: through blood, semen and breast milk. This allowed the same year to create the first tests to determine the presence of human immunodeficiency virus. Until 1997, when doctors began to prescribe zidovudine monotherapy for patients, the only way to help people was to treat opportunistic diseases that arise due to a

weakened immune system. However, at that moment there was a fear that people would start donating blood in order to find out their HIV status. To prevent this situation, the US government decided to open specialized centers where people could get tested for HIV. At that time, the first generation tests were used, which could detect only antibodies in the blood that are secreted by the immune system in response to the virus.

At the end of the 80s, a division into two types of immunodeficiency virus was established (HIV-1 and HIV-2), second generation tests have been developed. They could distinguish viruses by detecting the presence of antibodies through recombinant and / or peptide methods. Later, in the 90s of the last century, a third generation test was developed, which was distinguished by increased accuracy of determination. Subsequently, the method remained the same, but the test sensitivity increased. Now, as then, the basis of the tests is enzyme-linked immunosorbent assay (ELISA) - a method of qualitative or quantitative determination of various low-molecular compounds, macromolecules, viruses, etc., which is based on a specific antigen-antibody reaction. Identification of the resulting complex is carried out using the enzyme as a label for signal registration. To confirm the result, immunoblotting is used. According to WHO recommendations, this method is used in the diagnosis of HIV infection as an additional one, which should confirm the results of ELISA.

CLONIDINE AND IT IS EFECT ON THE BODY

Shaura D. — the 3—rd year student
Supervisors: Doc. Biol. Sc., Assoc. Prof. Simonova N.V., Kostina V.V.

Clonidine (Lat. Clonidinum) is a white crystalline powder. Soluble in water, poorly soluble in alcohol, chloroform and ether. Routes of administration: parenteral, sublingual. It stimulates alpha2-adrenergic receptors, lowers the tone of the vasomotor center of the medulla oblongata and reduces impulse in the sympathetic link of the peripheral nervous system at the presynaptic level. It is well absorbed from the digestive tract. The maximum effect develops after 2—4 hours and lasts about 5 hours. The duration of action is from 6 to 12 hours. It easily and quickly penetrates the GEB. It is excreted mainly by the unchanged kidneys and is used for hypertensive crisis, arterial hypertension, primary open-angle glaucoma, reduces intraocular pressure. Long-term use is accompanied by water retention in the body. With rapid administration, a short increase in blood pressure is possible due to stimulation of peripheral adrenergic receptors.

Side effects on the body from the nervous system and sensory organs: asthenia, drowsiness, slowing down the speed of mental and motor reactions, anxiety, nervousness, headache, dizziness, night anxiety, euphoria, sedation (more pronounced in the elderly), depression, bright or nightmares. On the part of the cardiovascular system and blood: bradycardia, orthostatic hypotension; with rapid on / in the introduction - increased blood pressure (short-term). Allergic reaction: skin rash, itc hing.

HYPNOTICS AND THEIR EFFECTS ON THE HUMAN BODY

Gracheva D.-the 3-rd year student

Supervisors: Doc. Biol. Sc., Assoc. Prof. Simonova N.V., Kostina V.V.

Hypnotics - a group of psychoactive drugs used to facilitate the onset of sleep and ensure its sufficient duration, as well as during anesthesia. Hypnotics induce a sleep close to physiological, accelerate its onset, normalize depth and duration. They relate to drugs that inhibit the central nervous system which are similar in nature to anesthetics, but are less active, they are administered mainly inside, and the effect develops slowly. In small doses, sleeping effect act soothingly, in medium doses they give sleeping pills, and in large doses they are as anesthetic and can cause paralysis of the respiratory center.

By chemical structure, sleeping pills are divided into derivatives of barbituric acid (barbiturates), benzodiazepine and drugs of different chemical structures. In the treatment with barbiturates, drowsiness, weakness, headache, ataxia, decreased attention and memory are often observed, and in elderly people and children, in addition, irritability, poor mood.

BENIGN MAMMARY DYSPLASIA

Romanova V., Zhuk A.- the 3-rd year students
Supervisors: Can. Med. Sc. Menshchikova N. V., Kostina V.V

Benign mammary dysplasia (mastopathy, fibrotic-cystic disease) is a disorder of epithelium differentiation, its atypia, a disorder of histstructure without invasion of the basal membrane and with the possibility of reverse development. Mastopathy is a common breast disease more common in women of reproductive age (20-45 years old). Occasionally, the disease also affects men, which is called gynecomastia. The occurrence of fibrosis-cystic disease is related to the imbalance of estrogen balance, as well as the trigger mechanisms of the disease can work in diseases of the nervous system - stress, depression, neurosis.

The main forms of mastopatiy - proliferative and non-proliferative. Proliferative mastopathy is characterized by the propagation of epithelium, myoepithelium, or by the sub-growth of epithelium and connective tissue. Varieties of this form of mastopathy are adenosis (masoplasia), growth of intraflow and slice epithelium, and sclerosing (fibrosing) adenosis. Nonliferative mastopathy is the growth of dense connective tissue with hyalinosis sites that contain atrophic and cystic-expanded ducts.

Diffuse and nodal forms of mastopathy are isolated, they are characterized by presence of palpable diffuse or focal seals of milk jelly. Nodal mastopathy is manifested by the presence of palpable single or multiple, usually painless, breast compaction centers that do not change during the menstrual cycle. In the diagnosis of mastopathy, clinical morphological and X-ray methods of investigation are used, which are particularly important in the differential diagnosis of nodal forms of mastopathy and breast cancer.

NON-FILTERED FORMS OF BREAST CANCER

Dzinevskaya A., Maskalenko Zh. — the 3-rd year students
Supervisors: Can. Med. Sc. Menschikova N.V., Kostina V.V.

The differential diagnosis between ductal and lobular carcinomas «in situ» of the breast is of great clinical importance due to the different therapeutic tactics in modern therapy of patients.

Lobular carcinoma «in situ» has historically been isolated as a separate morphological form of lobular neoplasia, characterized by intra-lobular proliferation of monomorphic small cells, fully performing the structure of the lobule and leading to its expansion. Initially, lobular carcinoma «in situ» was presented as an obligate precancerous disease. This assumption was based on the morphological similarity of lobular carcinoma «in situ» with invasive lobular cancer. In recent years, it has been seen as an indicator of the risk of invasive carcinoma rather than a true pre-tumor lesion.

Ductal carcinoma «in situ», unlike lobular carcinoma, is a neoplastic intra-ductal lesion characterized by epithelial proliferation, cellular atypia and potential for invasion. This type of carcinoma «in situ» is considered as a disease that increases the risk of invasive breast cancer by 8-10 times. Depending on the degree of nuclear polymorphism and intracurrent necrosis, to a lesser extent on mitotic activity and histological structure, ductal carcinoma «in situ» is divided into three degrees of differentiation. Lesions of varying degrees of differentiation are often found within the same biopsy material or even within the same duct.

ETHICAL AND LEGAL ASPECT OF MEDICAL EXPERIMENT

Nikonova Yu. - the 3-rd year student
Supervisors: Doc. Hist. Sc., Assoc. Prof. Kovalenko A.I., Kostina V.V.

In medical science, any discovery is preceded by an experiment on animals and humans, and its result is verified by practice.

Especially the problem of medical experiments was laid bare in the practice of the Third Reich doctors to conduct inhuman experiments on prisoners.

The final document was adopted, regulating the moral and legal aspects of conducting medical trials in humans - the Nuremberg Code (1947). The obtain voluntary consent is of paramount importance in conducting a medical experiment.

The protective principles of conducting medical experiments were further developed in the Helsinki Declaration of the World Medical Association (1964). The Helsinki Declaration states that medical progress is impossible without research, where their object is a person.

Thus, as innovative technologies develop, the moral and legal requirements for medical experiments will be tightened.

DIAGNOSIS OF THE CORONARY BLOOD PATHOLOGY IN PATIENTS WITH ACUTE CORONARY SYNDROME IN COMBINATION WITH ATRIAL FIBRILLATION

Bakhvalova A., Gritsaeva E. — the 3-rd year students
Supervisors: Can. Med. Sc. Kvasnikova Yu.V., Kostina V. V.

Atrial fibrillation (AF) is the most common heart rhythm disorder. The prevalence of AF in the general population is 1-2% and increases with age. One in five stroke patients has AF.

The aim of our study was to assess the state of coronary blood flow in patients with acute coronary syndrome (ACS) in combination with AF who were treated in the department of acute cerebrovascular circulation State Autonomous Healthcare Department of the Amur Region “Blagoveshchensk City Clinical Hospital”.

A retrospective analysis of 55 case histories for 2018-2019 was carried out. The average age of patients was 65.7 years old. The diagnosis of AF was established on the basis of objective data, the results of electrocardiography (ECG), Holter ECG monitoring, and a clinical diagnosis of discharge epicrisis.

The results of numerous studies have shown that arterial hypertension (AH) and obesity are risk factors for developing of atrial fibrillation.

The results of coronarography revealed the predominance of the multivascular and diffuse nature of the lesion of the coronary bed. The most frequently affected CAs were the anterior interventricular branch (PCJ) and the right coronary artery (PCA), 97.7% and 97.73%, respectively.

Thus, according to the CAG, most patients with ACS and AF have a combination of several risk factors, multivascular lesion of the CA. The most vulnerable backbone CA are RCA and anterior interventricular branch (AIB), stenosis in CA of the second order are found in blunt edge branch (BEB) and back lateral branch (BLB).

ACUTE NERVOUS SYSTEM DISEASE

Kulchitskaya T. — the 3-rd year student
Supervisors: Can. Med. Sc., Bubinets O.V., Kostina V.V.

Tetanus is an acute infectious disease caused by spores of the bacterium Clostridium tetani. The spores are found everywhere in the environment, particularly in soil, ash, intestinal tracts/feces of animals and people, and on the surfaces of skin and rusty tools like nails, needles, barbed wire, etc.

Being very resistant to heat and most antiseptics, the spores can survive for years. Anyone can get tetanus, but the disease is particularly common and serious in newborn babies and pregnant women who have not been sufficiently immunized with tetanus-toxoid-containing vaccines. Tetanus during pregnancy or within 6 weeks of the end of pregnancy is called “maternal tetanus”, and tetanus within the first 28 days of life is called “maternal tetanus”.

The disease remains an important public health problem in many parts of the world, but especially in low-income countries or districts, where immunization coverage is low, and unclean birth practices are common. Neonatal tetanus occurs when nonsterile instruments are used to cut the umbilical cord or when contaminated material is used to cover the umbilical stump. Deliveries carried out by people with unclean hands or on a contaminated surface are also risk factors.

In 2015, approximately 34 000 newborns died from neonatal tetanus id is 96% reduction in caparison with 1988 when an estimated 787 000 newborn babies died of tetanus within their first month of life.

However, there is increased risk of tetanus in adolescent and adult males who undergo circumcision due to declining immunity and limited opportunity for receiving booster doses in males in many countries.

THE POSSIBILITY OF CAUSING MULTIPLE GUNSHOT WOUNDS DURING SUICIDE

Kolupaeva E.V.- the 2-nd year resident
Supervisors: Can. Med. Sc., Assoc. Prof. Gigolyan M.O., Kostina V.V.

Examination of multiple gunshot injuries is difficult and includes the solution of a number of issues, such as: a) multiple gunshot injuries resulted from one or several shots; b) if there were a few shots then what were their distance and sequence; c) which of the gunshot injuries is fatal; d) determination of the type of weapon; e) assistance to investigating authorities in the formation of a version of murder, suicide and accident.

Inspection of the corpse and the search for specific material evidence are of great importance when inspecting the scene of a gunshot injury. The position and posture of the corpse is carefully fixed, determining the presence or absence of weapons, ammunition, cartridges, bullets, shot, wads. All this is recorded with an exact indication of the distance and location of the detected material evidence in relation to the corpse and its parts. Soot, traces of blood, particles of tissues and organs can be found on the guns, especially the bore. Puddles and drips of blood, drops and their location, the direction and shape of the spray on the surrounding objects are specify. The position of the corpse with features of drips of blood is compared.

Clothes is being examined in detail where there is the presence or absence of blood mark and the direction of its drips, which helps in establishing the position of the body at the time of injury. The presence of entrance and exit gunshot holes (wounds) on clothes and a corpse is stated. The orientation of the wound channel is approximately determined taking into account the localization of the entrance and exit gunshot wounds and the location of the bullet, if it is detected. Only a complete examination of the corpse can determine the orientation of the wound canal in blind and multiple gunshot wounds.

TREATMENT OF POSTOPERATIVE VENTRAL HERNIA IN PATIENTS WITH OBESITY AND DIABETES MELLITUS

Sushitskaya A., Ozerova Y. — the 3-rd year students
Supervisors: Doc. Med. Sc., Prof. Volodchenko N.V., Kostina V.V.

People with obesity and diabetes have low tissue regenerative abilities, poor resistance to infection and the risk of developing postoperative complications.

The treatment results of 163 patients with central postoperative hernias were studied. Here were revealed large hernias in 28 patients and giant ones in 9 patients. The diagnostic algorithm included the study of clinical, laboratory parameters and instrumental methods of research aimed at assessing the function of the cardiovascular and respiratory system. The control group consisted of 35 patients operated by using traditional methods of closing hernial gates with their own tissues. The main group consisted of 37 patients with large and giant hernias and obese and diabetes mellitus with using off non-tension methods ofoperation. (1). There were no fatal outcomes in the main group in the early postoperative period; seroma (5), infiltrate (1), and ligature fistula (1) were most often detected from wound complications. The development of wound complications was facilitated by extensive tissue detachment with damage to the blood

and lymph vessels, aseptic inflammation due to direct contact of the implant with subcutaneous fat. The course of the wound process was regularly monitored by ultrasound of the wound. Long-term results were studied up to 5 years. In the control group, hernia recurrence was detected in 5, in the main group, in 2 patients.

BREAST ENLARGEMENT.TO MAKE OR NOT TO MAKE?

Spirina Ju. — 3rd-year student
Supervisors — V.V. Grebenyuk, Prof., I.A. Bibik, Cand.Ped.Sc.

The Russian Society of Plastic Surgeons ranked the most popular plastic surgery procedures in the period from 2013 to 2017. Breast enlargement is rarely inferior to blepharoplasty. Despite the torment after the operation, possible complications, the girls still change their figures.

Nowadays, the most of the operations are successful, as in the analysis of 532 cases histories of patients operated in Siberian Institute of Beauty, fibrous capsular contracture was diagnosed only among 25 percent of the patients. If there were complications after the operation they were: seromas, suppurations, ptosis, infiltration.

In surgical treatment, there are two types of complications: general surgery, which are peculiar to the body, and specific, depending on various factors.

Nowadays, the silicone.implantsare often used.

Inspide of the fact the implant .is safe it is a heterogenous agent for patients body. At the same time stereotypical responses are made, for example, edema is formed nearly in all cases nearly all the time.

Edema is a result of violation of the integrity of the skin and damage of the soft tissue during the operation. And when blood vessels and lymphatic vessels are damaged, nerves, seromas, hematomas, and loss of sensitivity of the nipple-areolar complex occur.

There are specific complications of mammoplasty, depending on the skill and attentiveness of the doctor, the characteristics of the patient's body, on the selected implant.

The most common complication is capsular fibrous contracture. This is a natural reaction. There is a compression of an already established breast implant with a dense fibrous membrane, which forms in excess “format” around the implant. But if this shell becomes “thick”, then it begins to contract and compresses the implant. And then it will harden.

If the hygienic conditions are not followed during the development of the infection, and if the postoperative regimen is not followed, the bedsores are observed.

Mastoptosis (omission of the mammary glands) and loss of breast skin elasticity. When placing the implant under the mammary gland omission (mastoptosis) of the mammary glands occurs.

In the process of breast enlargement, stretching of the skin, the ligamentous apparatus of the mammary glands becomes evident, which causes the omission of the nipple- alveolar complex, in some cases much lower than the submammary fold. The most difficult operation is at the overestimated location of the nipple- alveolar complexes, since there are several dozen ways to raise the areola, but to lower it - 1 or 2 methods.

Using low-quality implant, toxic shock syndrome is developing, which is life-threatening. Its symptoms are: sudden fever, vomiting, diarrhea, fainting, dizziness and / or rash. Defective implants were associated with a rare type of cancer, which is known as anaplastic large cell lymphoma.

Inside the modern endoprosthesis, there is a highly adhesive silicone gel with a “shape memory", which is enclosed in a durable silicone shell. The contents of the implant resemble marmalade by consistency. Due to this, the gel does not leak, even if the shell is cut with a scalpel, and the implant itself does not lose its shape (does not flatten) even after years. Despite this fact, the outcome of plastic surgery depends on a thorough examination of a specialist, features of the female body and others. When deciding whether to make or not to make, it is necessary to consider all the pros and cons and think about possible complications. Maybe natural beauty is better?

MEDICAL EXCHANGE IN ROMANIA

I MiDia — 4th-year student
Scientific supervisors —E.A. Borodin, Prof., I.A. Bibik, Cand.Ped.Sc.

Romania is the eighth largest country in the European Union (EU), situated in the south-eastern part of central Europe. Its population is also one of the largest in the EU (seventh largest) but has been decreasing since the 1990s, due to declining fertility and birth rates, relatively high death rates and outward migration.

The Romanian health system is centered around the patient and is based on the principles of universal access to quality and equitably financed health care services. The Governments objective for the health system, as stated in its 2013—2016 Government Programme, is to achieve a health system that enables and supports the attainment of the best possible health of citizens and that contributes to improving their quality of life (Government of Romania, 2013).

Medical education in Romania takes six years (five years for dentists). After graduation, physicians have to pass an exam in order to enter specialty training. The duration of specialty training is five years for most specialties but may be longer (e.g. six years for neurosurgery), while specialty training in family medicine takes three years, and public health and health management four years.

SOME SIGNIFICANT RESEARCH IN NEUROLOGY FOR 2018-2019

A. Konev, D. Danchinov — 4th-year students
Scientific supervisors - V.N. Karnaukh, M.D., Prof., I.A.Bibik, Cand.Med.Sc.

Scientists from the Centro Nacional de InvestigacionesCardiovasculares (CNIC) have identified a possible cure for Alzheimer's disease. Working with a research team from Rockefeller University in New York, researchers showed that treatment with the oral anticoagulant dabigatran delays the onset of Alzheimer's disease in mice. The results, published in the Journal of the American College of Cardiology (JACC), showed that after a year of dabigatran treatment, the mice did not have memory loss or decreasing of cerebral circulation.

This treatment also reduced the typical symptoms of Alzheimer's disease, including inflammation of the brain, damage to blood vessels and plaques of amyloid protein.

According to Oxford Brain Diagnostics, London, UK, measuring cortical disorder (MCD) using diffuse Magnetic resonance imaging (MRI) correlates with Braak stages and improves the prognosis of amyloid Positron emission tomography (PET) in Alzheimer's disease progression. Measurements of cerebral cortex abnormalities were assessed by scanning diffuse MRI from the Neuroimaging Initiative for Alzheimer's in vivo dataset. Values of measurements of cerebral cortical disorder correlated with histological measurements in microcolumns, and this showed a gradual effect that reflected a neuropathological assessment of the severity of Alzheimer's disease in post-mortem confirmed cases, a significant positive correlation between MRI and Braak stages, from 0 to 6. Changes were detected especially in the para-hippocampal gyrus from the scan database of the Neuroimaging Initiative for Alzheimer's in vivo, which also had amyloid database of new PET scans available today. MCD correctly selected more than 50% of cases of false-positive PET results.

According to the Center for Biomedical Research at King's College, London, the presence of serotonergic pathology of A53T SNCA carriers (gene) preceded the development of dopaminergic pathology and motor symptoms, which emphasizes the potential early role of serotonergic pathology in the progression of Parkinson's disease. The results confirm that molecular visualization of serotonin transporters can be used to visualize premotor pathology of Parkinson's disease in vivo. Further studies will help establish whether serotonin transporter imaging is suitable as an additional tool for screening and monitoring progression for high-risk individuals or patients with Parkinson's disease to supplement dopaminergic imaging, or as a marker for Parkinson's disease in clinical trials.

Researchers at the Institute for Family Mental Health, Campbell, USA, as a result of repeated longitudinal images of medial prefrontal microcircuits in the living brain, found that prefrontal spinogenesis plays a critical role in maintaining specific antidepressant behavioral effects and maintaining long-term behavioral remission. Depressive behavior was associated with targeted, branch-specific removal of postsynaptic dendritic spines on prefrontal projection neurons. A dose of the ketamine antidepressant reversed these effects, selectively rescuing eliminated spikes and restoring coordinated activity in multicellular chains that predict motivated behavior.

Scientists at the Medical University of Washington, USA, have developed biodegradable polymer grafts designed to repair damaged vertebrae in the spine. Surgeons typically insert expandable titanium rods using minimally invasive surgery (MIS) to treat this condition. I was looking for more accessible material that will work with the MIR approach. They found material that could be dehydrated to a size compatible with spinal surgery, and after implantation it would expand to replace absent vertebrae by absorbing fluid.

POST-INFARCTION SYNDROME

A. Konev, D. Danchinov — 4th-year students
Scientific supervisors — O.A. Tanchenko, Ph. D., I.A.Bibik, Cand.Ped.Sc.

The symptom complex includes: fever, leukocytosis, symptoms of exudative pericarditis and (or) pleurisy, often with hemorrhagic exudate, pneumonia with hemoptysis (Lazovskis I. R., 1981). When the symptom-complex develops after a heart attack we use the term "post-infarction syndrome" but in another cases it used to be called as Dresslers syndrome.

It got its name in honor of the American therapist William Dressler (William Dressler, born 1890), who first described it in 1955. Dresslers syndrome is understood as a symptom complex that develops as a result of heart attack, pericardiotomy or mitral commissurotomy.

An autoimmune heart disease in which pericardial tissue is affected, most often the disease occurs on the 2nd-6th week from the onset of heart attack. The cause of the development of the disease is the lack of oxygen in the muscle layer of the heart. Most often, Dresslers post-infarction syndrome is observed in the case of extensive heart damage.

In general, the pathogenesis of this disease has been sufficiently studied and its cause is the death of cardiomyocytes due to acute hypoxia, often total, the larger the area of damage, the higher the risk of developing this syndrome.

The development mechanism can be represented in three stages:

1. The first stage is a heart attack and death of muscle fibers of the heart.

2. The second stage is the formation of autoantibodies to their own cells, the immune system begins to perceive dying cardiomyocytes as something hostile, and healthy body cells also fall under the immune response.

3. The third stage is the stage of clinical manifestations caused by damage to target cells.

For a post-infarction syndrome, the appearance of a typical symptomatic triad is characteristic: inflammation of the heart membrane; pleural inflammation - the membrane covering the lungs and chest wall; pneumonia. Pericarditis in this syndrome most often does not proceed severely, the patient has pains in the region of the heart, persistent and non-acute, which do not stop even after taking nitroglycerin, the duration of pain can be about 30-40 minutes or more. There is a general feeling of weakness, low-grade fever. With pleurisy, the patient feels pain in the chest, which intensifies when breathing. Autoimmune pneumonia occurs in patients much less often than pericarditis and pleurisy; the most common symptom is shortness of breath. An analysis is made of the medical history, disease history, family history, complaints are collected, a physical examination of the patient, a general blood test, a biochemical blood test, and a general urinalysis are performed. From instrumental methods performed: electrocardiography, echocardiography, chest x-ray, magnetic resonance imaging, computed tomography. Cardiologist consultation required. During the medical treatment of post-infarction syndrome, glucocorticoids, non-steroidal anti-inflammatory drugs are prescribed to the patient.

The development of complications is possible: a constantly recurring course of the disease, the duration of the relapse can be from 2 weeks to 2 months. Specific methods of prevention have not been developed. In order to prevent relapse, the patient is prescribed taking such drugs as: non-steroidal anti-inflammatory drugs, glucocorticoids.

Thus, it is proved, that early rehabilitation of patients with myocardial infarction significantly reduces the manifestations of post-infarction syndrome. It should be understood that this disease is chronic and it is important not only to receive the full amount of treatment during the period of the disease manifestation, but also to maintain the achieved condition without allowing dangerous complications to develop.

TYPES OF AQUAPORINS AND THEIR ROLE IN THE HUMAN BODY

Sinyakin I. — 2nd-year student
Supervisors - T.A. Batalova, Prof., I.A. Bibik, Cand.Ped.Sc.

Aquaporins, also called water channels, are integral membrane proteins from a larger family of major intrinsic proteins that form pores in the membrane of biological cells, mainly facilitating transport of water between cells. The cell membranes of a variety of different bacteria, fungi, animal and plant cells contain aquaporins through which water can flow more rapidly into and out of the cell than by diffusing through the phospholipid bilayer. Aquaporin has six membrane-spanning alpha helical domains with both carboxylic and amino terminals on the cytoplasmic side. Two hydrophobic loops contain conserved asparagine-proline-alanine NPA motif. Because aquaporin is usually always open and is prevalent in just about every cell type, it causes water to almost always flow to down its concentration gradient. This leads to a misconception that water readily passes through the cell membrane down its concentration gradient. This is not true because only non-polar substances can diffuse directly through the lipid bilayer.

PARVOVIRUS INFECTION

Avetisyan Ya.-5th-year student
Scientific supervisors — T.A. Dolgikh, I.A. Bibik, Cand.Ped.Sc.

Parvovirus infection (PVI) is an acute infectious disease characterized by the development of exanthema, mild symptoms of intoxication, and joint damage. It belongs to the family Parvoviridae, genus Erythroparvovirus. The genome is single stranded DNA. Currently, three genetic groups of the virus have been isolated. Genotype 1 includes B19V, 2mu - Lali and A6 strains, 3a - strain V9 and 3b - strain D91.1. Genotypes 1 and 2 are known to circulate in Northern Europe with the same frequency; however, 50 years ago, genotype 2 disappeared from the population. A recent study in 11 countries in Europe, Asia and West Africa confirmed the dominance of genotype 1 (91.5% genotype 1 and only 8.5% genotype 3). In Russia, it has been statistically shown that PVI is widespread in the Northwest. In the period 2009—2012 and in 2015, PVI was extended to 9 out of 11 territories of the Russian Federation, with predominance in St. Petersburg, Kaliningrad and Leningrad regions.

Clinically expressed PVI develops mainly in children from 4 to 10 years in a typical form. The disease is manifested by unexpressed symptoms of general infection intoxication and often occurs at normal body temperature. The incubation period lasts 4-14 days, a maximum of 20 days. The prodromal period in most cases is absent. The rash period begins 20 to 22 days after infection. On the 1st day, the rashes are localized on the skin of the patients face in the form

of small red spots that merge quickly, forming bright erythema on the cheeks - “rash on cheeks”. Over the next 4 days, a maculopapular rash spreads throughout the body and limbs, with localization predominantly on the extensor surfaces of the limbs. Elements of the rash merge and form erythematous areas of irregular shape. Then the spots begin to fade in the center, acquiring a kind of mesh-like, “lace” look. In 70% of cases, rashes are accompanied by itching of the skin. The rash gradually disappears within 10 days, leaving no peeling. In some patients (about 20%), a second wave of rashes may occur after exposure to various physical environmental factors (hot bath, cold, etc.).

Specific diagnostics are presented by the serological method (ELISA) and the molecular genetic test (PCR). A feature of PVI is a two-stage manifestation of clinical signs. The first stage develops 10 to 12 days after infection. In the blood plasma, PV B19 DNA is detected, which are detected in the material up to 1 year and specific IgM circulating for 1-3 months. 2 - 3 days after IgMIgG are formed, which are determined throughout life. At the second stage, during the rash period, one of the markers and all three (IgM, IgG, DNA) can be determined in the patients blood plasma. The immunoblot allows the determination of antibodies to PVI antigens with the obligatory determination of IgM titer and IgG reactivity.

Summing up, it can be concluded that the problem of PVI remains relevant due to the widespread prevalence of infection, the formation of protracted forms of the disease with prolonged virus isolation in immunocompromised patients and the absence of vaccination. Of particular interest is PVI for domestic infectious disease specialists working in the field of pediatrics.

INSULIN RELEASE AND ACTION

Eliseev S. — 2nd-year student
Scientific supervisor - T.A.Batalova, Prof., I.A. Bibik, Cand.Ped.Sc.

The secretion of insulin is primarily stimulated by an increase in the concentration of glucose and amino acids in the blood plasma, as well as by some gastrointestinal hormones. Plasma glucose concentration is undoubtedly the most important regulator of insulin secretion. Glucose partially acts through the ion channels in the cell membrane. Glycolysis In this case, ATP is formed, which inhibits ATP-sensitive potassium channels (KATP-channels) in the cell membrane. Their inhibition leads to depolarization, which initiates the opening of calcium channels. A subsequent increase in intracellular calcium concentration leads to stimulation of insulin secretion. While maintaining high absolute values, biphasic secretion occurs.

The action of insulin is aimed at the accumulation of energy substrates: insulin stimulates the consumption of glucose, amino acids and fatty acids by cells. Cell consumption, in particular, is stimulated by increased incorporation of the glucose transporter GLUT4 into the cell membrane. Insulin stimulates glycogen formation and protein synthesis, but at the same time inhibits lipolysis, glycogenolysis, proteolysis and gluconeogenesis. Insulin, on the other hand, stimulates glycolysis. The action of insulin is partly associated with the activation of the Na^+ / H^+ exchanger and $Na^+, K^+, 2Cl^-$ - cotransporter in the cell membrane. The activity of both vectors leads to cell swelling, which, at least in the liver, inhibits the breakdown of

macromolecules. Insulin stimulates the entry of magnesium into the cell. Along with this, the absorption of sodium in the kidneys increases through the stimulation of the epithelial sodium channel.

CONSEQUENCES OF FIRE IN THE TRAIN TRAVELLING FROM KARACHI TO RAWALPINDI IN PAKISTAN ON 31 OCTOBER 2019

Eliseev S., Kim R., Shelygin I. — 2nd-year students
Supervisors — L.A. Guba, Cand.Biol.Sc., I.A. Bibik, Cand.Ped.Sc.

A terrible tragedy in Pakistan, 65 people were burned alive in a passenger train. The train was sent from the largest city of Karachi to Rawalpindi. It is 15 kilometers from the capital of Pakistan, Islamabad. Flames engulfed 3 carriages in the area of Rahimyar Khan, in the south of Punjab province.

The train was in motion and many people died, trying to jump on the go. After stopping, burning carriages were able to be disconnected from the rest of the train. The cause of the fire is the explosion of a gas cylinder, which was used for cooking. According to doctors, some victims have such severe burns that it is not possible to establish a personality. According to the Minister of Railways, Sheikh Rashid Ahmed, people on the long-distance trains sneakily cook in violation of safety rules.

Early on July 11, 2019, another railway accident occurred. The train carrying people from Lahore to Quetta crashed into the freight train in RakhimyarHar at full speed. The first train was not moving in its own way. As a result of the accident, 3 carriages of the passenger train rolled off the rails.

In recent decades, Pakistan's rail network has declined due to chronic underfunding and poor maintenance.

PECULIARITIES OF THE ACUTE CORONARY SYNDROME IN PATIENTS WITH DIABETES MELLITUS

Kocharyan A., Kalmykova A. — 4,5th-year students
Scientific supervisors - E.V. Magalyas, L.K. Reshetnikova, I.A. Bibik, Cand.Ped.Sc.

Acute coronary syndrome is an exacerbation of the stable course of coronary heart disease and is clinically manifested by the formation of myocardial infarction, the development of unstable angina or sudden death. Often, diabetes mellitus occurs in patients with acute coronary syndrome. The presence of type 2 diabetes in patients with cute coronary syndrome worsens the course, prognosis, leading to adverse outcomes.

The aim of the study was to study the course of acute coronary syndrome in patients with diabetes mellitus.

The study included 22 patients with acute coronary syndrome, suffering from type 2 diabetes mellitus, who were treated in emergency cardiology of JSC "Blagoveshchensk city clinical hospital". Among the examined patients, women predominated-15 people (67.5%), men were — 7 people (32.5%). The average age of patients was 67.2±1.3 years. At the same time, the average age of men was less than that of women. In women, the average age was 68.03±3.1 years, in

men-60.4±1.4 years. The duration of coronary heart disease in patients averaged 17.1±0.71 years. Before hospitalization, all were diagnosed with type 2 diabetes lasting 13.4±1.4 years. Unstable angina was diagnosed in 15 (67.5%) patients, myocardial infarction in 7 (31.5%) patients, myocardial infarction with Q wave in 4 (57.2%) patients, myocardial infarction without Q wave in 3 (42.8%) people.

Of the unstable risk factors for cardiovascular diseases, the majority had arterial hypertension-77.5%, dyslipidemia-71.4%, overweight (BMI greater than 25kg / m2) — 45.5%, obesity (BMI greater than 30kg/m2) — 18%, smoking-29.5%.

A combination of two or more risk factors was found in 14 (63%) patients, including frequent combination of smoking with arterial hypertension. Burdened heredity was marked in 18 (81%) patients. It should be noted that most often there were arterial hypertension, myocardial infarction and dyslipidemia. Concomitant diseases occurred in 17 people (76.5%).

In the first 6 hours from the onset of the disease, 3(13.5%) patients sought medical help, from 6 to 24 hours — 9 (40.5%) patients, and later in the day 10 (45%) patients.

One of the most important signs of acute coronary syndrome is pain syndrome. A typical angina attack was observed in 3 (13.5%) patients, a low-symptom form was observed in 8 (36%) patients, an asymptomatic form in 11 (49.5%) of the respondents. Shortness of breath and attacks of cardiac asthma occurred in 3 (13.5%) patients. In the biochemical analysis of blood hyperfibrinogenemia was observed in 15 (67.5%) patients, C-reactive protein positive in 12 (54%) patients, dyslipidemia-in 16 (72%). Hyperglycemia occurred in 9 (40.5%) patients, with fasting glucose levels of 8.8±3.5 mmol/l.

When admitted to the hospital 5 (22.5%) patients had no clear changes on the ECG. When analyzing the localization of myocardial infarction, anterior myocardial infarction was registered in 4 (18%), anterolateral infarction - in 3 (13.5%) patients, posterolateral infarction-in 1 (4.5%) patient. In 9 (40.5%) patients, multivessel lesions of the coronary bed were revealed.

Thus, patients with acute coronary syndrome and type 2 diabetes mellitus, a combination of two or more risk factors for coronary heart disease was established, among which arterial hypertension, myocardial infarction, dyslipidemia were most often detected. The clinical picture was dominated by painless acute coronary syndrome, which led to late hospitalization. In most cases, diabetes mellitus was noted by multivessel coronary disease. In this regard, patients with diabetes need regular dynamic monitoring and timely correction of risk factors for cardiovascular diseases.

MEDICAL CARE IN THE RUSSIAN FEDERATION

Yakimenko S. — 5th-year student
Supervisors — E.A. Sundukova, Cand.Ped.Sc., I.A. Bibik, Cand.Ped.Sc.

Medical care is a set of measures aimed at maintaining and (or) restoring health and including the provision of medical services.

A medical service is a medical intervention or a set of medical interventions aimed at the prevention, diagnosis and treatment of diseases, medical rehabilitation and having an independent finished value.

Medical care is provided by medical organizations and is classified by type, condition and form of such care.
Types of medical care:
1) Primary health care.
2) Specialized, including high-tech, medical care.
3) Ambulance, including specialized ambulance, medical care.
4) Palliative care.
Medical assistance may be provided in the following conditions:
1) Outside a medical organization (at the place of emergency call, including specialized emergency medical care, as well as in a vehicle during medical evacuation).
2) Outpatient (in conditions that do not provide for round-the-clock medical supervision and treatment), including at home when a health worker is called.
3) In a day hospital (in conditions providing for medical supervision and treatment in the daytime, but not requiring round-the-clock medical supervision and treatment).
4) Inpatient (in conditions that provide round-the-clock medical supervision and treatment).
Forms of medical care:
1) Emergency is medical care provided for sudden acute diseases, conditions, exacerbation of chronic diseases that pose a threat to the patient's life.
2) Emergency is medical care provided in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life.
3) Elective care is medical care that is provided during preventive measures, for diseases and conditions that are not accompanied by a threat to the patients life, which do not require urgent and urgent medical care, and delaying the provision of which for a certain time does not lead to deterioration of the patients condition, threat for his life and health.

CONGENITAL COSOROSIS

Bugera E. — 2nd-year student
Supervisors — A.E. Pavlova, I.A. Bibik, Cand.Ped.Sc.

Congenital obliquity is a congenital shortening of the tendon-muscle and ligamentous apparatus of the forearm and hand in the absence or underdevelopment of the radius, less often the ulnar.

Congenital ulnar obliquity is forearm pronated, but with a deviation of the hand towards the underdeveloped ulna, i.e. outside. The hand is deformed. There are often underdeveloped or absent III, IV and V fingers with corresponding metacarpal bones. The forearm is curved and shortened, muscle hypotrophy is observed. The flexion and extension of the hand are not limited, the grasping function is preserved.

Congenital radial oblique is the wrist and forearm which are penetrated, form a different angle (from blunt to sharp), open inside, i.e. towards the absent or underdeveloped radius. The hand is underdeveloped, flattened due to the absence of the 1st finger and metacarpal bone, less often the 2nd and 3rd fingers are proximally displaced protruding to the rear of the ulnar head. The forearm is shortened and curved to the dorsal side. Hypotrophy of the muscles of the forearm and

shoulder is noticeable. The mobility and strength of the fingers as a result of contracture of one degree or another are limited. The hand is unstable.

FEATURES OF THE BEHAVIOR OF BROWN BEARS IN THE KURIL ISLANDS

Zelenin I. — 2nd-year students
Supervisors — L.A. Guba, I.A. Bibik, Cand.Ped.Sc.

Bears are among the most savvy and smart animals. The brown bear inhabits the group of the Kuril Islands - Paramushir, Iturup and Kunashir. The brown bear is the largest predator that lives in the Sakhalin forests. Its weight may exceed 600 kg. Powerful forelimbs equipped with long claws have great destructive power. The way of life of bears in the Kuril Islands differs from the mainland relatives. This is primarily due to climatic conditions. Winter is mild, with little snow and starts in November. A protracted, late spring in Paramushir raises a bear from hibernation in the second decade of April. And females with cubs usually leave the den only by the beginning of May. Summer on the island is foggy and rainy. Therefore, most animals try to stay on the sunny sides of hills and in places free of snow. Bears on the islands lead an extremely sedentary lifestyle, and each individual occupies a certain small territory, carefully guarding it. Among the individuals, a clearly expressed struggle is not observed, since the islands have a rich food supply, there are no signs of cannibalism.

Attacks on humans on the territory of the islands are possible, first of all, through the fault of a person, or under accidental circumstances. For example, finding a person between cubs and a she-bear, also in places where the bear is fishing for salmon. The bear itself will not attack a person. With a shortage of fish, and this happens on the islands once every 4 years, bears enter villages, concentrate in areas of landfills, fishing farms, hoping to find food, they do this mainly at night.

ANOMALIES OF THE DEVELOPMENT OF THE SMALL INTESTINE

Zelenin I. — 2nd-year student
Supervisors — A.E. Pavlova, I.A. Bibik, Cand.Ped.Sc.

Anomalies in the development of the small intestine are observed in 1 in 2500-3000 births.

Atresia and stenosis of the small intestine. The most frequent localization of this type of anomaly is the duodenum and jejunum. In the distal part of the duodenum, stenosis predominates, in the proximal part - atresia, in the middle section the distribution of these defects is approximately equal.

Megaduodenum is a sharp increase in the size of the duodenum, occurs as a result of the absence or underdevelopment of the nerve plexuses; with excessive growth of the intestine, loops can occur.

Meckel's diverticulum is a congenital diverticulum occurs throughout the ileum, on average, at a distance of 35 cm from where it enters the cecum. Being the remainder of the embryonic umbilical canal, it can reach a length of 29 cm. Its lumen depends on the degree of development of the wall. Sometimes it has its own mesentery and fits freely between the loops of the intestine.

Doubling of the small intestine takes place in the ileum (40% of cases), in the jejunum (6% of cases) of all doublings of the digestive tract.

Rotation anomalies (violation of bowel rotation, incomplete rotation) occur when the normal bowel rotation is disturbed in the embryonic period, when bowel rotation does not end, it goes wrong or in the opposite direction, when various parts of the intestine are fixed, most often the duodenum, embryonic cords (adhesions) in abnormal position. Anomalies of the duodenal turn are manifested by symptoms of chronic duodenal obstruction.

THE CONSEQUENCES OF GETTING BIRDS INTO THE ENGINE OF AIRCRAFT

Timofeeva A., Bykova E. — 2nd-year students
Supervisors — L.A. Guba, I.A. BibikCand.Ped.Sc.

Emergency landing of A321 near Zhukovsky is an aviation accident that occurred on August 15, 2019. Airliner Airbus A321-211 airline "Ural airlines" performed scheduled flight U6 178 on the route Moscow-Simferopol, but soon after taking off from Zhukovsky Airport it collided with a flock of seagulls, and it failed both engines. The engine caught fire when landing, the fire of the aircraft was avoided. On Board of the plane there were more than 230 people including 35 children and crew members (7 people). The commander of the aircraft, so successfully made such a difficult landing, was DamirYusupov, and the co-pilot was GeorgyMurzin.

Hit of birds into engines of the aircraft is considered to be a global problem. So all airports have ornithological services, whose task is to make the territory unattractive for birds.Only during the autumn period, 50-100 birds are caught at airports. These figures suggest that ornithological services managed to prevent dozens of aircraft accidents.

DEVELOPMENTAL ABNORMALITIES OF THE COLON

Bykova E. — 2nd-year student
Supervisors - S.S. Seliverstov, Assoc.Prof. I.A. Bibik, Cand.Ped.Sc.

The relevance of the study of positional anomalies of the colon in adulthood is determined by the frequency and severity of developing complications (intussusception, inversion, nodulation), pronounced functional disorders (pain, constipation, flatulence), changes in the clinical picture of diseases developing against the background of colon anomalies. The frequency of various anomalies of the colon at childs age of 1 to 40000

I. Congenital growth disorder of the colon. If at the stage of development of the embryo, the growth of the intestinal wall as a result of any reasons stops, then there is a congenital shortening or absence of any part of the colon.

II. The position and mobility of the colon is determined by such factors as its relation to the peritoneal covers, the length and shape of the mesentery, the presence of fixing ligaments and adhesions in the abdominal cavity.

III. Rotational anomalies. If the growth of the intestinal tube in the process of embryogenesis was normal, but its rotation and fixation to the back wall of the abdomen were violated at one of the stages, then such a pathological condition leads to the emergence of rotational anomalies.

IV. In violation of the process of recanalization of the intestinal tube, atresia of the colon can develop, which leads to acute intestinal obstruction in the newborn, and therefore such anomalies do not occur in adults.
V. Embryonic cords and adhesions can be represented by various options, and their clinical manifestations will be due to the localization and severity of symptoms of intestinal patency.

DEVELOPMENTAL ABNORMALITIES OF THE ADRENAL GLANDS

Pendyur A — 2nd-year student
Supervisors - S.S. Seliverstov, Assoc.Prof., I.A. Bibik, Cand.Ped.Sc.
The adrenal glands are paired organs of internal secretion located in the retroperitoneal space above the upper poles of the kidneys.
Bilateral adrenal aplasia (complete absence) is rare, usually together with other severe malformations (for example, in anencephaly), incompatible with life. Unilateral aplasia is often accompanied by hypertrophy of the other adrenal gland.
Dystopia of the adrenal glands is quite common, while their functioning is not disturbed-the adrenal glands are located under the kidney capsule, in the kidney tissue and various areas of retroperitoneal tissue. The ectopia of adrenal tissue in the lung is described.
Adrenal gland (Marchand's adrenal gland, marshals organ) is the most common abnormalities of the adrenal glands which are associated with their dual origin. There may be additional cortical or cerebral masses located at different levels along the midline on the dorsal wall of the body. The adrenal gland (or part of it) may be located under the renal or hepatic capsule, in the parathyroid tissue, in the liver, in the abdomen, along the genitourinary tract, in the scrotum or spermatic cord in men, the broad ligament of the uterus or the vaginal wall in women.
Disc-shaped adrenal gland. The most common congenital abnormality of the adrenal glands is the discoid adrenal gland, which is associated with renal agenesis or renal ectopia. This discoid form develops due to the lack of pressure on the adrenal gland by the adjacent upper pole of the kidney, which leads to the appearance of a discoid adrenal gland.

JUXTAGLOMERULAR APPARATUS OF THE KIDNEY IN NORMAL AND PATHOLOGICAL CONDITIONS

Pendyur A. — 2nd-year student
Supervisors — V.S. Kozlova, I.A. Bibik, Cand.Ped.Sc.
The juxtaglomerular complex consists of dense spot cells located in the initial part of the distal tubule, and juxtaglomerular cells of the walls of the bringing in and carrying out arterioles. Dense spot cells are a special group of epithelial cells of the distal tubule, closely adjacent to the bringing and carrying arterioles. The cells of the dense spot contain the Golgi apparatus, whose secretory organelles face the arterioles. It is believed that these cells are capable of releasing substances acting on arterioles.
The most frequent skin changes caused by cell hyperplasia. They are more pronounced in renovascular hypertension: the average total number of cells in the JGA 14 increases by 3 times, the number of granulated cells - by 8 times, the area — twice. These parameters significantly

increase in acute glomerulonephritis with normal and high blood pressure, malignant hypertension, tubular necrosis, renal cortex necrosis, rejection reaction of the transplanted kidney. The severity of these changes also has a certain prognostic value and can help in the choice of treatment tactics. In addition to hyperplasia of the cells of the south, its atrophy is found, for example, in primary hypokalemic aldosteronism, or Conn's syndrome. A tumor from the cells of the south is described. Clinically, it is manifested by high blood pressure and high renin content in blood plasma.

ANENCEPHALY

Smirnova K. — 2nd-year student
Supervisors — A.E. Pavlova, I.A. Bibik, Cand.Ped.Sc.

Anencephaly (in Greek means “without the brain”) is an intrauterine malformation of the fetus that forms in the early stages of pregnancy, a gross malformation of the brain, which means a partial or complete absence of bones of the cranial vault and soft tissues, as well as the cerebral hemispheres brain.

A brain defect is 100% fatal, in 50% of cases the fetus with anencephaly dies in the womb, and the remaining 50% of the children are born into the world and in 66% of the cases they live for no more than a few hours, some can last up to a week.

Most fetuses have such developmental abnormalities: underdeveloped adrenal glands; lack of a pituitary gland; in 17% of cases - spinal hernia; in 2% of cases - splitting of the hard and soft palate; splitting of vertebral arches and other defects of the nervous system.

Classification of anencephaly. Depending on the damage to the bones of the base of the skull, anencephaly is classified into groups: the first group - merocranium - cranial defects, does not affect the large occipital foramen; the second group - holocranes - the occipital part is affected with a change in the opening; the third group - holocaranies with rachischis. Fronto-occipital-vertebral type occurs in 71.4% of cases of anencephaly, occipital-vertebral type - in 23.8% and parietal-temporal-vertebral type - in 4.8%.

SYNDACTYLY

Batsaeva — 2nd-year student
Supervisors — A.E. Pavlova, I.A. Bibik, Cand.Ped.Sc.

Syndactyly is a congenital anomaly of limb development, which is characterized by incomplete or complete fusion of two or more fingers on the hands and toes on the feet. Most often, the disease is inherited by an autosomal dominant type of inheritance, or under the influence of various adverse factors in embryogenesis.

The anlage of the hand occurs at about 4-5 weeks of fetal development. During this period, the fetus has a physiological syndactyly. Normally, at 7-8 weeks, the formation of the fingers of the hand occurs, due to the rapid growth of the finger rays and a slowdown in the development of interdigital spaces. In case of violation of the reduction of the interdigital septa, there is no separation of the fingers, which leads to the development of syndactyly. It is manifested by fusion on the childs hand of the middle and ring fingers on the hands or toes on the feet of the

second and third fingers. Bilateral syndactyly is characterized by the appearance of a symmetrical joint of the fingers on the hands. Undivided fingers may be underdeveloped or normally developed. Sometimes there may be a decrease in the number of phalanges due to amniotic amputation. In the case of the development of membranous or cutaneous syndactyly, the function of the hand is practically unchanged.

AGE-SPECIFIC FEATURES OF UTERINE DEVELOPMENT

Yegorova A. — 2nd-year student
Supervisor — A.E. Pavlova, I.A. Bibik, Cand.Ped.Sc.

The uterus in the newborn, at the infant age and during early childhood has a cylindrical shape, flattened in the anterior direction. The cervical canal in the newborn is wide, usually containing a mucous plug. The mucous membrane of the uterus forms branched folds, which are smoothed by the age of 6 to 7. The muscle layer of the uterus is underdeveloped. The neck of the womb is directed downwards and posteriorly.

ANOMALIES OF THE DEVELOPMENT OF THE BONES OF THE LEG

Makhmudova A. — 2nd-year student
Supervisors — A.E. Pavlova , I.A. Bibik, Cand.Ped.Sc.

Congenital dislocation of the tibia is rarely detected, usually it is bilateral in nature. It is accompanied by contracture and knee deformity. The type of deformation depends on the type of displacement of the lower leg bones. The muscles of the thigh and lower leg are underdeveloped, they often have abnormal attachment points. Pathology is often combined with anomalies in the development of the ankle joint, the absence or underdevelopment of the tibia.

Valgus and varus deformities of the knee joint are rare, they can be inherited. Usually they are combined with deformation of the femoral neck and flat feet. They become the cause of early severe gonarthrosis.

Aplasia or underdevelopment of the tibia is accompanied by shortening and curvature of the limb. The foot is supinated, it is in the equinus or subluxation position. The support is broken. Perhaps there is a combination with underdevelopment or lack of foot bones, underdevelopment or dislocation of the patella, atrophy and impaired development of the muscles of the lower leg and thigh.

The false joint of the tibia may be true or occur at the location of the congenital cyst. Pathological mobility, angular or arched curvature in the pseudoarthrosis, muscle atrophy, tightening and cicatricial changes in the skin, shortening and thinning of the limb are detected.

ABNORMALITIES OF THE ESOPHAGUS

Sderzhikova V. — 2nd-year student
Supervisors — A.E. Pavlova, I.A. Bibik, Cand.Ped.Sc.

Abnormalities of the esophagus appear from birth.

Among the numerous malformations of the esophagus, obstruction (atresia), esophageal-tracheal fistulas and various stenoses are more common.

It is possible to form 6 main types of congenital obstruction of this organ. The first earliest and most permanent symptom of esophageal atresia is a large amount of foamy discharge from the mouth and nose. After sucking the mucus, the latter continues to accumulate rapidly.

For the first feeding obstruction of the esophagus is confirmed by the fact that all liquid drunk immediately poured back, there is coughing with the sudden respiratory failure by the end of the first day of life and respiratory failure was observed . Congenital esophageal-tracheal fistula. The presence of a congenital anastomosis between the esophagus and the trachea without other abnormalities of these organs is relatively rare.

Among the anomalies of the development of the esophagus, doubling of the organ, complete or partial, is also often found. When the lower part is doubled, the stomach is also doubled. If the additional esophagus ends blindly, there is congenital esophageal diverticulum. The defect is manifested by dysphagia and regurgitation due to the accumulation of food in the blind SAC. Esophageal aplasia is one of the rare abnormalities of esophageal development. With this defect, the esophageal tissue is not developed, so the prognosis for life is unfavorable.

CONGENITAL FALSE JOINTS

Matsenko L. — 2nd-year student
Supervisors — A.E. Pavlova , I.A. Bibik, Cand.Ped.Sc.

The false joint is a clinical and radiological concept that describes persistent pathological mobility in any part of the skeleton. Congenital false joints are more often diagnosed in the lower leg, less often in the forearm. This pathology is 0.5% among all orthopedic abnormalities.

The main signs of a congenital pseudoarthrosis are excessive limb mobility, muscle atrophy, the presence of imbalance in relation to another part of the body, loss of support function of the damaged limb.

Congenital pseudarthrosis can be true and latent. True false joint is detected immediately after determining angular deformation. The damaged segment is shortened, and fragments are mobile. The difference in the length of the limbs can reach 10-12 cm, sometimes combined with the underdevelopment of the ankle joint and fibula.

With a latent false joint, a deformation of the bone in the lower third is observed and the signs of sclerosis are detected at the site of the curvature.

The prognosis of the disease is very unfavorable; some patients are forced to undergo multiple operations. Sometimes an injured limb is amputated.

AGE FEATURES OF THE CARDIOVASCULAR SYSTEM

SemikinaM. — 2nd-year student
Supervisors — A.E. Pavlova, I.A. Bibik, Cand.Ped.Sc.

The newborn has a round heart. Its transverse size is 2.7-3.9 cm, its length is on average 3.0-3.5 cm. The atria are large compared to the ventricles, the right is much larger than the left. The heart grows especially rapidly during the first year of a childs life, and its length increases more than its width. Individual parts of the heart vary in different age periods unequally. In the first year of life, the atria grow faster than the ventricles. At the age of 2 to 5 years and especially at 6

years, the growth of the atria and ventricles occurs equally intensively. After 10 years, the ventricles increase faster. The total heart weight of the newborn is 24 g. Heart volume from the neonatal period to 16 years of age increases by 3—3.5 times, and most intensively increases from 1 year to 5 years and during puberty. In newborns and children of all age groups, the pre-cardio-ventricular valves are elastic, the valves are shiny.In newborns and infants, the heart is high and lies transversely.

AGE CHARACTERISTICS OF THE HEARING ORGAN

Ivashkiv A. — 2nd-year student
Supervisors — A.E. Pavlova, I.A. Bibik, Cand.Ped.Sc.

The auditory system starts functioning from the moment of birth. The external auditory canal in children of early age is shorter and already slotted than in adults. The eardrum in newborns is thicker. Drum cavity walls are thin. This is a risk of infection transition into inflammatory phase, which may take place in the drum cavity and then in the brain lining. Auditory bones have dimensions close to those of an adult. The newborn 's inner ear is developed well.

LIVER DISEASE

Toroyan A — the 2nd year student
Supervisor - Doctor of medical sciences professor Borodin E.A

Cytolytic syndrome.It occurs as a result of degeneration and necrosis of hepatocytes with damage and increased permeability of cell membranes. The functionality of the liver, depending on the severity of the process, can be within normal limits or reduced.Cholestatic syndrome. It occurs when there is a violation of the outflow of bile. Liver functions associated with lipid emulsification, secretion of bilirubin, cholesterol, xenobiotics, etc. are impaired. Other functional capabilities of the liver, depending on the severity of the process, may be within normal limits or reduced. Liver failure syndrome. The reason is pronounced dystrophic changes in hepatocytes and / or a significant decrease in the functioning liver parenchyma due to its necrotic changes. It is characterized by a decrease in one, several or all functions of the liver below the level necessary for normal life. Mesenchymal inflammatory syndrome. The activation and proliferation of lymphoid and reticulohistiocytic cells, increased fibrogenesis, the formation of active septa with hepatocyte necrosis, intrahepatic leukocyte migration, vasculitis are observed. It is diagnosed during thymol, sublimate samples, determination of gamma globulin and serum immunoglobulins. Portocaval Bypass Syndrome. It occurs with the development of anastomoses in the liver.

THE DISEASE ITSENKO — KUSHINGA

Serbicheva A.-the 2-th year student
Supervisor: Borodin E.A

The Disease Itsenko-Kushinga — neuroendocrine disorder that develops as a result of the defeat of the hypothalamic-pituitary axis, hypersecretion of ACTH and secondary hyperfunction of the adrenal cortex. The complex of symptoms characterizing the disease Itsenko-Kushinga, includes obesity, hypertension, diabetes mellitus, osteoporosis, reduced gonadal function, dry skin, stretch marks on the body, hirsutism.

The development of the disease Itsenko-Kushinga, in most cases associated with the presence of basophilic or chromophobe pituitary adenomasecreting adrenocorticotropic hormone. In tumor lesions of the pituitary gland in patients revealed microadenoma, macroadenoma, adenocarcinoma. In some cases, there is the connection with the beginning of the disease prior to

the release of infectious lesions of the Central nervous system (encephalitis, arachnoiditis, meningitis), traumatic brain injury, intoxications. In women, the disease is Cushing's may develop on the background of hormonal changes caused by pregnancy, childbirth, menopause.

Patients with the disease Itsenko-Kushinga different cushingoid appearance caused by the deposition of adipose tissue in typical areas: face, neck, shoulders, Breasts, back, stomach.Endocrine disorders in women with the disease Itsenko-Kushinga expressed the menstrual cyclesometimes amenorrhea. There exists an excessive body hair body (hirsutism), hair growth on the face and hair loss on the head. Men, there is a reduction and loss of hair on the face and body; hypoactive sexual desire, impotence. Onset of Cushing's in children can lead to delayed sexual development due to a decrease in the secretion of gonadotropins.

PALM OIL

Potrnyagin D.-the 1th years student
Scientific leader — prof. Borodin E.A.

Palm oil is a vegetable oil obtained from the meaty part of the fruits of the oil palm (Elaeis guineensis). The seed oil of this palm is called palm kernel oil.If you look at the composition of products in stores, you will notice that palm oil is almost everywhere. Palm oil is often subjected to various accusations by the public and the scientific community. Palm oil is accused of a large proportion of saturated fatty acids - 50%. But unlike lard, palm oil does not contain atherogen, which can trigger the development of atherosclerosis. While saturated fatty acids are digestible in pork fat, unsaturated oleic acid, which is completely absorbed by the body, is digestible in palm oil. Palm oil is the most stable of foods. It is easily tolerated by oxide and thermal exposure (180 ° C in the presence of air). Cocoa butter substitute is easily crushed from palm oil. The ability of a fatty acid to increase blood cholesterol and provoke the development of atherosclerosis, vascular thrombosis, heart disease, obesity makes palm oil an unacceptable product in the diet of a person of any age.

DEUTSCHE ABTEILUNG

DIABETISCHE POLYNEUROPATHIE: PATHOGENESE, KLINISCHE MANIFESTATIONEN, DIAGNOSE UND GRUNDPRINZIPIEN DER BEHANDLUNG

Moltschanow A.I. - der Student des 5 Studienjahres
Wissenschaftliche Leiter: Tantschenko O.A., Tkatschowa N.A.

Neuropathie, die ein charakteristisches Krankheitsbild hat, weist in den meisten Fällen auf das Vorliegen verschiedener pathologischer Zustände hin. Gegenwärtig gibt es ungefähr 400 Krankheiten, von denen eine die Schädigung der Nervenfasern ist. Die meisten von Krankheiten sind ziemlich selten beobachtet, so dass für viele Ärzte die Hauptpathologie, die von Symptomen einer Neuropathie begleitet wird, Diabetes ist. Es nimmt einen der ersten Plätze bei der Inzidenz von Neuropathien in Industrieländern (ca. 30%). Nach verschiedenen Studien tritt bei 10-100% der Patienten mit Diabetes mellitus eine diabetische Polyneuropathie (DPN) auf.

Die folgenden Faktoren spielen eine wichtige Rolle bei der Pathogenese von DPN:

1. Mikroangiopathie (funktionelle und / oder strukturelle Veränderungen in den Kapillaren, die für die Mikrozirkulation der Nervenfasern verantwortlich sind).

2. Stoffwechselstörungen: Aktivierung des Polyol-Shunts (ein alternativer Weg des Glukosestoffwechsels, bei dem sie (unter Verwendung des Enzyms Aldosereduktase) in Sorbit und anschließend in Fruktose umgewandelt wird; die Akkumulation dieser Metaboliten führt zu einer Erhöhung der Osmolarität des Interzellularraums); eine Abnahme des Myoinosit-Spiegels, die zu einer Abnahme der Synthese von Phosphoinosit (einem Bestandteil der Membranen von Nervenzellen) führt, was letztendlich zu einer Abnahme des Energiestoffwechsels und einer gestörten Leitung eines Nervenimpulses beiträgt; Nicht-enzymatische und enzymatische Glykation von Proteinen (Glykation von Myelin und Tubulin (Strukturkomponenten des Nervs) führt zu Demyelinisierung und gestörter Weiterleitung des Nervenimpulses, Glykation der Proteine der Basalmembran der Kapillaren führt zu deren Verdickung und zu Stoffwechselprozessen in den Nervenfasern); erhöhter oxidativer Stress (erhöhte Oxidation von Glucose und Lipiden, verminderte antioxidative Schutzwirkung trägt zur Akkumulation von freien Radikalen bei, die direkt zytotoxisch wirken); die Produktion von Autoimmunkomplexen (nach einigen Berichten hemmen Antikörper gegen Insulin den Nervenwachstumsfaktor), der zur Atrophie der Nervenfasern führt).

Am häufigsten tritt distales sensorisches oder sensomotorisches DPN auf, das sich entweder als vorherrschende Läsion kleiner Fasern oder als vorherrschende Läsion großer Fasern manifestieren kann. Im ersten Fall sind die wichtigsten klinischen Manifestationen von DPN: brennende oder scharfe stechende Schmerzen; Hyperalgesie; Parästhesie; Verlust von Schmerz oder Temperaturempfindlichkeit; Fußgeschwüre; Mangel an viszeralen Schmerzen. In der zweiten - wird der Patient einen Verlust der Schwingungs- und propriozeptiven Empfindlichkeit haben; Areflexie.

Die Diagnose von DPN besteht aus: einer Sammlung von Krankengeschichten und Patientenbeschwerden; neurologische Untersuchung (Bestimmung der Schwingungs-, Tast-, Temperatur- und Schmerzempfindlichkeit) und andere Arten der Diagnostik, um andere Formen der Neuropathie zu identifizieren.

Es ist bekannt, dass Diabetes mellitus einen Mangel an vielen Vitaminen und Mikroelementen aufweist. Die Beseitigung des Mangels an B-Vitaminen und Alpha-Liponsäure spielt jedoch die wichtigste Rolle bei der Behandlung von DPN. Das Hauptziel der Behandlung und Prävention von DPN ist die Optimierung der Blutzuckerkontrolle. Zahlreiche in den letzten Jahren durchgeführte Studien haben überzeugend bewiesen, dass das Erreichen eines optimalen Blutzuckerspiegels innerhalb eines Tages die Entwicklung von Manifestationen von DPN verhindert. Die modernste und kompetenteste Behandlung der Neuropathie wird ohne dauerhafte Entschädigung für Diabetes unwirksam sein.

GLOBALE BEHANDLUNGS - UND PRÄVENTIONSSTRATEGIE VON ASTHMA BRONCHIALE (GINA).

Ojun I. — die Studientin des 4. Studenjahres
Wissenschaftliche Leiter: K. m. W. Kulik E. G., Tkatschjowa N. A.

Asthma bronchiale (BA) ist eine chronische entzündliche Erkrankung der Atemwege, an der viele Zellen und Zellelemente beteiligt sind. Derzeit leiden weltweit rund 300 Millionen Menschen an dieser Krankheit. Trotz der Bemühungen der modernen Medizin ist BA heute durch eine hohe Prävalenz, einen anhaltenden Verlust der Arbeitsfähigkeit, eine Abnahme der Lebensqualität und Sterblichkeit der Patienten gekennzeichnet.

Die Globale Strategie für die Behandlung und Prävention von Asthma bronchiale (GINA) ist ein grundlegendes Dokument für die Verwaltung von Patienten mit Asthma bronchiale. Es wurde geschaffen, um das Bewusstsein für Asthma bei Fachleuten und Behörden der öffentlichen Gesundheit zu erhöhen, um die Maßnahmen und die Behandlung von BA weltweit zu verbessern.

Das GINA scientific Committee wurde 2002 gegründet, um die Ergebnisse der veröffentlichten Studien zur Behandlung und Prävention von BA zu bewerten und sie in einheitliche Empfehlungen mit jährlichen Revisionen zu integrieren. Die Mitglieder des Ausschusses sind weltweit anerkannte Leiter in der Forschung zu BA bei Kindern und Erwachsenen sowie in der klinischen Praxis und verfügen über eine hohe wissenschaftliche Qualifikation, die es ermöglicht, die vom Ausschuss gestellten Aufgaben zu erfüllen. Das wissenschaftliche Komitee wird für die Uberprüfung der wissenschaftlichen Literatur BA, zweimal im Jahr gemeinsam mit der internationalen Konferenz der American Thoracic Society (American Thoracic Society, ATS) und gemeinsam mit der internationalen Konferenz der europäischen respiratorischen Gesellschaft (European Respiratory Society, ERS) gesammelt. Eine Liste aller vom Ausschuss überprüften Publikationen finden Sie auf der GINA-Website. Während der Ausschusssitzungen wird jede Veröffentlichung diskutiert, die von mindestens einem Ausschussmitglied als in der Lage angesehen wurde, den GINA-Bericht zu beeinflussen. Die Uberarbeitungen der „Globalen Strategie zur Behandlung und Prävention von Asthma " werden normalerweise im Dezember jedes Jahres veröffentlicht und basieren auf der Bewertung der Publikationen vom 1.Juli des vorangegangenen Jahres bis zum 30 Juni.

Seit 2002 gibt der Ausschuss jedes Jahr Empfehlungen für Diagnosen und Behandlungen, die von mindestens einer Regulierungsbehörde für die BA genehmigt wurden, aber seine

Entscheidungen basieren auf den besten verfügbaren beweisen, die unabhängig überprüft wurden.
Gemäß der GINA 2019 - Richtlinie wird empfohlen, eine Kombination von niedrigen Dosen von inhalativen Kortikosteroiden — Formoterol nach Bedarf, als bevorzugte Therapie zur Linderung von Anfällen und Symptomen bei Patienten mit jedem Schweregrad von Asthma bronchiale zu verwenden, um BA zu behandeln. Die Verwendung von Monotherapie mit kurz wirkenden β2-Agonisten nach Bedarf wird nicht mehr als bevorzugte symptomatische Therapie empfohlen.

GLOBALE STRATEGIE DER DIAGNOSE, BEHANDLUNG UND VORBEUGUNG DER CHRONISCHEN OBSTRUKTIVEN LUNGENERKRANKUNG.
HISTORISCHE AUSKUNFT

Budnik V. - der Student des 4. Studienjahres
Wissenschaftliche Leiter: K.m.W. Kulik E.G., Tkatschjowa N.A.

Die chronisch obstruktive Lungenerkrankung (COPD) ist eine Erkrankung, die durch eine anhaltende Einschränkung der Luftgeschwindigkeit in den Atemwegen gekennzeichnet ist und in der Regel hat stetig fortschreitete Charakter und eine abnorme entzündliche Reaktion des Lungengewebes auf Reizung durch verschiedene pathogene Partikel und Gase.
COPD ist eine der führenden Ursachen für Morbidität und Sterblichkeit in der heutigen Gesellschaft, nimmt 3. Platz in der Welt unter den Ursachen der Letalität. Das stellt ein bedeutendes Soziales und wirtschaftliches Problem dar, das keine Tendenz zur Verbesserung hat.

Die Internationale Gruppe von COPD-Experten hat 1997 in Zusammenarbeit mit dem Nationaen Institut fur Herz-Lungen und Blut, mit dem Nationalen Institut der Gesundheit der USA und der Weltgesundheitsorganisation wurde eine Vereinbarung über die Notwendigkeit einer Globalen COPD-Initiative (GOLD) akzeptiert. Der erste Bericht der GOLD-Arbeitsgruppe, der die Grundlage für die Einrichtung nationaler COPD-Diagnostik-und Behandlungsprogramme in mehreren Ländern bildete, wurde 2001 veröffentlicht. Er befasste sich mit einer Reihe von Fragen, die die Notwendigkeit einer frühen klinischen und funktionellen COPD-Diagnose und Methoden zur Erreichung dieser Voraussetzungen betrofen. Die folgenden zehn Jahre der ersten Ausgabe von GOLD waren von einer großen Anzahl von Studien geprägt, die sich mit den Besonderheiten der Pathogenese, Pathomorphologie, Verlauf und Behandlung von COPD befassten. Das Ergebnis jahrelanger Arbeit wurde die erste Revision GOLD 2007, wo erstmals spirometrische Klassifizierung der COPD eingeführt wurde, basiert auf postbronchodilatationen Werten von FEV1 und FEV1/FVC<70%, dass obligatorisches Zeichen für alle Stadien der Erkrankung ist.

Der Ergebnissen wissenschaftlicher Studien in 2011 nach, wurde eine neue Version des Leitfadens veröffentlicht, die eine genauere Formulierung der Definition, eine Bewertung des Risikos von COPD-Exazerbationen und eine Spirometrische Klassifikation der Krankheit nach dem Grad der Einschränkung des Luftstroms enthält. Auch hat das Nationale Institut für Gesundheit und klinische Qualität Großbritannien gezeigt, dass für eine effektive Behandlung von Patienten und die Verbesserung Ihrer Lebensqualität ein integrierter Ansatz für die Beurteilung des einzelnen Patienten unter Berücksichtigung der Symptomen, die Häufigkeit von

Exazerbationen in der Anamnese, Schwere der bronchialen Obstruktion und Schwere der Kamorbiden Pathologie. In diesem Zusammenhang erschien in GOLD Kapitel 3, das neue Therapieansätze skizzierte.

Ein weiterer neuer Aspekt des nächsten GOLD 2017-Berichts ist eine detaillierte Diskussion über Strategien zur Intensivierung und Deeskalation der Behandlung, während sich frühere Berichte hauptsächlich auf Empfehlungen zur Starttherapie konzentrierten.
Neue GOLD-Berichte werden jährlich veröffentlicht, aber der Text macht nur alle paar Jahre signifikante Anderungen, da sich neue Informationen ansammeln, die in der klinischen Praxis berücksichtigt werden müssen.

MEDIZINISCHE UND ÖKOLOGISCHE ASPEKTE DES UNFALLS UND DES TODES DES TANKERS «NADEZHDA»

Bystrova A.O. — die Studentin des 2. Studienjahres
Wissenschaftliche Leiter — Guba L.A; Tkatschjowa N.A.

Am 28. November 2015 stürzte der Tanker Nadezhda bei einem Sturm vor der Küste der Hafenstadt Nevelsk im Südwesten von Sachalin ab. Das Schiff, das illegal 186 Tonnen Heizöl und 560 Tonnen Diesel transportierte, wurde es auf eine felsige Sandbank geworfen. Infolge der Beschädigung des Schiffskörpers führt es zu einer Überschwemmung von Ölprodukten, die die Wasserfläche von mehr als 20.000 m^2 und den Überstreifen mit einer Länge von etwa 7 km verschmutzten, was zur Massenvernichtung von Seevögeln führte. Es wurde festgestellt, dass die Mannschaft an Bord des Schiffes berauscht war.

Bei der Untersuchung des Seegebiets durch Umweltunternehmen und Freiwillige wurden viele Vögel gefunden, die fast vollständig mit Heizöl bedeckt waren. Mindestens 100 Vögel lebten noch im Sichtfeld, aber die geklebten Federn gaben ihnen nicht die Möglichkeit zu fliegen und sogar zu schwimmen. Kormorane versuchten, sich vor einem starken Nordwestwind hinter Felsvorsprüngen und Betonkonstruktionen zu verstecken. Bei starkem Wind und Frost waren die Überlebenschancen der anderen sehr gering. Die Meeresverschmutzung ist für Hunderte von Vögeln tödlich geworden.
Spezialisten und Freiwillige bemühten sich, die Vögel zu retten, aber bereits am ersten Tag bei der Reinigung starben 33 Vögel - ihre Umweltverschmutzung und Vergiftung waren zu hoch. Am 8. Januar 2016 überlebten 15 Vögel: 13 Kormorane, 1 entenköpfiger Seemann, 1 Punkt Guillemot. Bis zum 21. Januar überlebten nur 5 Kormorane. Insgesamt wurde der Tod von 136 Vögeln genau festgestellt - 122 Kormorane, 1 Guillemot, 7 Enten, 6 Möwen, aber in Wirklichkeit ist ihre Anzahl um ein Vielfaches höher.

Der von verschiedenen Gerichten bestätigte Gesamtschaden für Umwelt, Gemeinde und Dritten Personen belief sich auf rund 524 Millionen Rubel. Der Kapitän des Tankers, der mit einer Geldstrafe von 120.000 Rubel bestraft wurde, wurde als einziger Schuldiger des Unfalls befunden, der zur Umweltkatastrophe führte.

Die Nevelserfahrung zeigt, dass die Reaktionsgeschwindigkeit bei der Rettung kontaminierter Vögel ein entscheidender Faktor ist und nicht sichergestellt wurde. Dadurch starben mehr als 100 Vögel, die gerettet werden konnten. Dies ist eine traurige, aber lehrreiche

Geschichte, die besagt, dass Maßnahmen zur Rettung der geölten Tiere sofort ergriffen werden müssen, die Rechnung wörtlich Minuten lang läuft und jede Verzögerung fatal sein kann.

VERMISSTE MENSCHEN IN DEN WÄLDERN RUSSLANDS IM AUGUST 2019

Tabakaewa T. - die Studentin des 2. Studienjahres
Wissenschaftliche Leiter: K. b. W. Guba L.A., Tkatschjowa N.A

Ein normaler Spaziergang durch den Wald oder eine Pilzwanderung kann für Sie ein ernstes Problem werden. Im Wald können Sie viele Gefahren haben. Die häufigste Gefahr im Wald ist die Verirrung. Jedes Jahr sind im Wald sehr viele Menschen verloren, die in den Wald spazierenehen oder sich entschieden haben, Pilze und Beeren zu sammeln. Statistik der Truppe "Lisa Alert" für August 2019 hat 2919 Anträge auf Suche nach Vermissten aus ganzen Russland. Aus Anträgen: Gefunden und lebendig sind 2452, gefunden, aber getötet sind 149, die Familie haben gefunden - 30, Identität festgestellt - 6. Die Suche nach denen, die nicht gefunden wurden - geht weiter. Von einigen möchte ich Ihnen erzählen.

Am 15. August wurde im Omskaja Gebiet ein im Wald vermisster dreijähriger Junge lebend gefunden. Das Kind wanderte zwei Tage durch den Wald. Den Kleinen suchten etwa 700 Menschen aus der Zahl der Mitarbeiter des Katastrophenschutzministeriums, der Polizei, der russischen Garde, der lokalen Verwaltung, sowie Volontäre, die Freiwilligen und die Ortsbewohner. Auch Luftflotte, Quad-Bike und Geländefahrzeuge waren an die Suche nach dem Kind angeschlossen.

Am 21. August war Sarina Avgonova gefunden, die am 18. August unter geheimnisvollen Umständen verschwand. Im Dorf Stepanowka kam sie nach der Pilzwanderung mit ihrer Oma nach Hause zurück, blieb sie bei einem der Verwandten. Irgendwann wurde das Mädchen im Haus nicht mehr gesehen. Mehr als 800 Menschen aus den unterschiedlichsten Regionen Russlands waren auf der Suche nach dem Kind gezogen, darunter Sonderdienste, Suchdienste.

Am 31. August wurde der 70-jährige Gennadij Nikitin und sein neun jähriger Enkel Dima gefunden. Im Ortsteil Orton wurden am 28. August Pilzksammler vermisst. Nachdem sie nicht mehr in Kontakt gekommen waren, bat die Mutter des Kindes die Polizisten um Hilfe. Mehrere Polizeieinheiten sowie Freiwillige der Such- und Rettungseinheit «Lisa Alert» haben sich auf die Suche gestellt. Mehr als 24 Stunden haben Polizei und Freiwillige die Taiga-Arrays durchgekämmt.

DIE FOLGEN DES TODES VON KINDERN IN RUSSLAND

Xenofontowa M., Badmaewa G. - die Studentinnen des 2. Studienjahres
Wissenschaffliche Leifer: K.m.W.Guba L.A., Tkatschjowa N.A.

Laut Statistik beträgt der durchschnittliche Indikator für getötete Kinder pro Jahr in unserem Land 2-3 Tausend. Nach bekannten Angaben "wurden mehr als 60% der Tötungen von Jugendlichen auf Haushalfs-Boden begangen, auch bei Konflikten mit Albersgenossen. Ungefähr 20% der Straftaten sind als Ergebnis von Raubüberfällen." In den neun Monaten des Jahres 2018 starben "1292 Kinder durch Mörder".

Das Gericht von Saratow verurteilte die Mutter und den Stiefvater des 7-jährigen Sasha Rodin, der an systematischen Schlägen starb. Die Angeklagten verspotteten das Kind mehrere Tage. Am Körper des Jungen zählten Experten mehr als 100 Hämatome. Saschas Tod kam durch ein "langweiliges, kombiniertes Trauma des Körpers mit Blutungen unter der Hirnhaut, Gehirnkontusionen und Nierenverlefzungen".

SCHÄDEL IM ALLGEMEINEN - DIE NOTWENDIGKEIT EINER EINHEITLICHEN WAHRNEHMUNG WISSENSCHAFTLICHER INFORMATIONEN

Sarotschinzewa D.- die Studentin des 1. Studienjahres
Wissenschaffliche Leifer: D.m.W.Grebenjuk W.W., Tkatschjowa N.A.

Der gebildete menschliche Schädel besteht aus 29 permanenten Knochen, von denen 11 paarweise und 7 ungerade sind. Der Schädel bestimmt die Form des Kopfes, die von der Art der Struktur des menschlichen Körpers und den individuellen Eigenschaften abhängt. In der Anatomie und Anthropologie beschreiben Sie die Gesichts -, lateralen, vertikalen, basilaren und okzipitalen Normen.

Funktionen des Schädels: 1) schützender (enthält das Gehirn und die Sinnesorgane, schützt diese Bildung vor Beschädigungen); 2) Bezugspunkt (dient als Behälter für das Gehirn, Sinnesorgane, Grund-Abteilungen Verdauungs-und Atmungssystem); 3) Motorische (artikuliert mit dem Wirbelkanal Säule).

Der Schädel besteht im Allgemeinen aus: Äußere Schädelbasis; innere Schädelbasis: vordere, mittlere, hintere schädelgrube; Augenhöhle; Temporal und podvisochnaya Grube; Flügelgrube; Knochen, oder fester Gaumen; Nasenhöhle.

Auf dem Gelände der funktionalen Bestimmung im Schädel unterscheiden verschiedene Abteilungen: 1 - Hirn Schädel (cranium neurale (neurocranium) seu cranium cerebrale). Dazu gehören: das Dach oder das Gewölbe des Schädels (calvaria seu fornix cranii). Dachknochen beziehen sich auf flache Knochen;Schädelbasis (basis cranii). Die Knochen der Schädelbasis gehören zu den gemischten Knochen, einige von Ihnen sind pneumatisch — enthalten luftführende Hohlräume (Nebenhöhlen). Unterscheiden Sie die äußere (basis cranii externa) und die innere Basis des Schädels (basis cranii interna).

Knochen des Gehirns. Ungepaarte: okzipitalnoy (OS occipitale), frontal (OS frontale), keilförmig (OS sphenoidale), Gitter (OS ethmoidale) Knochen. Gepaart: temporal (os temporale) und parietal (os parietale) Knochen.

2 - Viszeral -, oder Gesichts-Schädel (cranium viscerale (viscerocranium) seu cranium faciale). Die Knochen des gesichtsschädels beziehen sich auf gemischte Knochen.

Knochen Gesichts-Abteilung: Unpaaren: Schar (vomer), Unterkiefer (Unterkiefer) und zungenbein (os hyoideum). Gepaart: der Oberkiefer (maxilla), der untere Nasenmuschel (concha nasalis inferior), Gaumen (os palatinum), Jochbein (os zygomaticum), Nasenbein (os nasale), Tränen (os lacrimale) Knochen.

Alle Knochen des Schädels, mit Ausnahme des Unterkiefers, durch sitzende faserverbindungen verbunden-Nähte; Unterkiefer-beweglichen Kiefergelenks.

Die Knochen des Schädels werden durch Nähte verbunden. Die Knochen des Gesichts, angrenzend aneinander glatte Kanten, bilden flache (harmonische) Nähte. An der Stelle der Verbindung der Schuppen des temporalen Knochens und der unteren Kante des parietalen Knochens bildet sich eine schuppige Naht. Zu den gezackten Nähten gehören koronar -, sagittal- und lambdovidnyje die Nähte. Die koronarnaht wird durch die Verbindung der parietalen Knochen und des frontalen Knochens gebildet. Die Verbindung zwischen zwei parietalen Knochen bildet eine sagittale Naht. Die Verbindung der beiden parietalen und okzipitalen Knochen bilden lambdanaht. An der Kreuzung von sagittal und koronaren Nähten bei Kindern bildet sich eine große Fontanelle (der Ort, an dem das Bindegewebe noch nicht in den Knochen übergegangen ist). An der Kreuzung von sagittal und lambdovidnogo Nähte bildet sich eine kleine Fontanelle.

HÄMOPHILIE

Schpilewaja A. — die Studentin des 1. Studienjahres
Wissenschaftliche Leiter: Naumenko V.N., Tkatschjowa N.A.

Das Blut eines Patienten mit Hämophilie verliert seine Gerinnungsfähigkeit, das heißt eine leichte Verletzung eines gesunden Menschen kann für ihn tödlich sein.

Hämophilie ist eine rezessive Erkrankung, die mit dem X-Chromosom in Verbindung steht. Ein Gen ein Junge, so wurde er krank, und ein Mädchen wird als Träger geboren. Bei Frauen (Mädchen) ist es ein sehr seltenes Ereignis. Wenn der Fötus sein eigenes Kreislaufsystem bildet (und dies geschieht in der vierten Schwangerschaftswoche), wird er tot und tritt spontane Abtreibung (Fehlgeburt) auf. Es entwickelt sich in Abwesenheit von speziellen Proteinen im Körper, die für den Blutgerinnungsprozess verantwortlich sind. Eine Mutation im X-Chromosom führt zum Fehlen der Blutgerinnung der Faktoren VIII (Hämophilie A) oder IX (Hämophilie B). Bei einem Patienten mit Hämophilie ist die Menge im Blut signifikant verringert oder es gibt überhaupt keine Faktoren. Die Schwere des Krankheitsverlaufs hängt von der Konzentration der Gerinnungsfaktoren ab.

Zuvor verwendeten die Ärzte Eiweißextrakte, Schlangengift, Erdnussmehl und andere Produkte. 1840 versuchten sie, gespendetes Blut zur Behandlung von Hämophilie zu verwenden. In den frühen 1950er Jahren lernten sie, Blutplasma zu transfundieren. Ein Durchbruch in der Behandlung ereignete sich 1965. Dr. Judith Graham Pool, taut Blutplasma auf, fur Transfusion von Patienten und fand einen dunklen Niederschlag mit konzentrierten Gerinnungsfaktoren - Kryopräzipitat, das erfolgreich zur Blutstillung eingesetzt wurde.

Zur Bestätigung der Diagnose wird ein Koagulogramm erstellt, in dem die Anzahl der Gerinnungsfaktoren VIII und IX als Prozentsatz der Norm berechnet wird. Basierend auf den Daten beurteilen die Arzfe den Schweregrad der Erkrankung und wählen die Behandlungstaktik.

Die Hauptmethode bei der Behandlung von Hämophilie ist heute die Blutersatztherapie. Zu diesen Zwecken wurde eine große Anzahl von Arzneimitteln entwickelt. Am meisten ist die Verwendung von rekombinanten Gerinnungsfaktoren bevorzugt. Die Präparate enthalten keine pathogenen Viren. Sie werden von Bakterien synthetisiert, in deren Genom ein Teil des

menschlichen DNA-Moleküls eingeschleust wird, das für die Bildung des notwendigen Faktors verantwortlich ist.

Moderne Methoden der Schwangerschaftsdiagnostik erlauben mit einer Wahrscheinlichkeit von 95%, die Geburt eines kranken Kindes bereits in einem Zeitraum von 11-12 Wochen vorherzusagen. Nach 10—11 Wochen wird eine Chorionzottenbiopsie durchgeführt, nach 12—15 Wochen ist eine Amniozentese möglich, und für einen Zeitraum von 18-22 Wochen ist eine Cordozentese möglich. Diese Methoden sind in Bezug auf die Diagnose von Hämophilie beim Fötus sehr zuverlässig.

SPAETERE KOMPLIKATIONEN DER ZUCKERKRANKHEIT

Oorshak A. — die Studentin des 1. Studienjahres
Wissenschaftliche Leiter: Feoktistowa N.A., Tkatschjowa N.A.

Späte Komplikation von Diabetes mellitus ist Pathologie, die sich aus der langfristigen Wirkung von erhöhtem Blutzucker auf die Organe und Gewebe des Körpers ergibt. Späte Komplikationen von Diabetes mellitus ist die Hauptursache für den Tod von Patienten mit Diabetes mellitus. späte Komplikation entwickelt sich bei beiden Arten von Diabetes . Fünf große Spätkomplikationen von Diabetes mellitus werden klinisch isoliert:

Makroangiopathie,Nephropathie, Retinopathie, Neuropathie und diabetisches Fußsyndrom.

Diabetische Makroangiopathie ist ein kollektives Konzept, das die atherosklerotische Läsion großer Arterien bei Diabetes mellitus vereinigt. klinisch manifestiert sich koronare Herzkrankheit, obliterative Atherosklerose der Gefäße des Gehirns, der unteren Extremitäten, der inneren Organe und arterielle Hypertonie.

Diabetische Retinopathie ist die Verletzung der Kapillaren, Arteriolen und venolen der Netzhaut,die sich durch die Entwicklung von Mikroaneurysmen,Blutungen, das Vorhandensein von exsudativen Veränderungen manifestiert und auch die Proliferation von neu gebildeten Gefäßen . Es gibt drei Stadien der diabetischen Retinopathie: nicht-proliferative, präproliferative, proliferative.

Diabetische Nephropathie ist die spezifische Nierenschädigung bei Diabetes, die mit morphologische Veränderungen in den Kapillaren und Arteriolen der Glomeruli, begleitet was zu deren Okklusion, sklerotischen Verandemenger, einer fortschreitenden Reduktion der Filterfunktion der Nieren und der Entwicklung von chronischem Nierenversagen főhnt.

Diabetische Neuropathie impliziert eine Verletzung des zentralen und peripheren Nervensystems bei Diabetes.

5.Diabetes-Fuß - Syndrom ist ein pathologischer Zustand des Fußes bei Diabetes, die vor dem hintergrund der Läsion der peripheren Nerven, Haut und ihne Weichteile, Knochen und Gelenke Auftritt und sich durch akute und chronische Geschwüre, Knochen-Gelenk-Läsionen und eitrige nekrotische Prozesse manifestiert.

DIE RELEVANZ DES STUDIUMS DER ANATOMIE IM BILDUNGSPROZESS

Gurshabon A. — die Studentin des 1. Studienjahres
Wissenschafftliche Leiter: Grebenjuk V.V., Tkatschjowa N.A.

Die menschliche Anatomie ist die Wissenschaft von der außeren Form und der inneren Struktur des Korpers. Sie untersucht die Struktur des menschlichen Körpers im Zusammenhang mit der Funktion seiner Organe, der Besonderheiten der Herkunft und der Altersentwicklung des Menschen sowie den Arbeits- und Lebensbedingungen. Dies gilt sowohl für den gesamten menschlichen Korper als auch für seine einzelnen Systeme und Organe.

Da die Untersuchung des menschlichen Körpers in der Anatomie immer unter Berücksichtigung seiner Funktionen und seiner einzelnen Organe durchgeführt wird, entspricht der Name "funktionelle Anatomie" am ehesten dem Inhalt der modernen menschlichen Anatomie. Werden diese oder andere anatomische Daten mit der Lebenstatikeit des Korpers verbunden, so warden diese Daten vollständig und stellen für einen Fachmann eine Interesse, Vitalfunktionen eines Organismus in Verbindung sind.

Das Studium der Anatomie zielt auf die Losung vieler Probleme ab, unter denen die Entwicklung einer materialistischen Weltanschauung, die Vorbereitung auf die Wahrnehmung anderer biomedizinischer Wissenschaften (Physiologie, Medizin) und die Beherrschung der Kenntnisse, Fahigkeiten und Fertigkeiten, die für die berufliche Tatigkeit erforderlich sind.

Die Anatomie als Gegenstand wissenschaftlicher Forschung findet die strukturellen Merkmale des Organismus auf verschiedenen Ebenen der Organisation lebender Materie heraus - von der Untersuchung des gesamten Korpers bis zur Aufdeckung der Gesetze der Struktur der Zelle und ihrer Bestandteile.

Die Hauptuntersuchungsmethode ist eine Autopsie, Praparation, Vorbereitung. Die Anatomie ermoglicht systematische Messungen, Beschreibungen und Skizzen, Fotos und Rontgenbilder von Form, inneren Strukturen, Position und topographischen Beziehungen von Organen und Korperteilen unter Berücksichtigung von Alter, Geschlecht, individuellen und beruflichen Merkmalen.

Daher ist das Studium der Anatomie im Bildungsprozess notwendig, da jede klinische Disziplin mit einer anatomischen und physiologischen Einführung beginnt, mit der Wiederherstellung eines starken und grundlegenden Wissens uber die Struktur eines gesunden, normalen menschlichen Korpers.

PEPTIDHORMONE

Angarhajewa B. - die Studentin des 1. Studienjahres
Wissenschaftliche Lieter: Veoktistowa N.A., Tkatschjowa N.A.

Peptidhormone sind Substanzen mit Proteincharakter, die von verschiedenen endokrinen Drusen im Korper produziert werden.

Diese Drüsen umfassen:

Hypophyse;
Nebenschilddrusen;
Bauchspeicheldruse;

Schilddrüse;

Peptide werden jedoch nicht nur in bestimmten Drusen produziert, einige von ihnen werden von Fettgewebe, Magenzellen, einigen Leber- und Nierenzellen produziert.

Der Wirkungsmechanismus von Peptidhormonen ist fur alle Wirkstoffe dieser Art typisch und hangt nicht vom Produktionsort des Hormons selbst ab. Die Anwendungspunkte der Aktivitat und die endgultige Auswirkung der Exposition sind unterschiedlich. Alle Hormone wirken auf die Zielorgane durch Kommunikation mit speziellen Rezeptoren in der Zellmembran.

Jeder Rezeptor erkennt nur eigenes Hormon, nur das, das ihn beeinflussen kann. In der Zelle werden unter dem Einfluss eines an den Rezeptor gebundenen Peptids Mediatoren in Form verschiedener Enzyme gebildet. Diese Enzyme in der Zelle aktivieren die notwendigen Funktionen und es kommt zu einer wirksamen Reaktion auf die Wirkung des Peptidhormons.

Peptidhormone konnen dem Alterungsprozess widerstehen und Wiederherstellungsprozesse im Gewebe auslosen, was auch zu einer qualitativ hochwertigen Erholung nach aktiver korperlicher Aktivität beitragt. Sie sind in der Lage, die Proteinsynthese zu normalisieren, wodurch die Anhaufung von negativen Veranderungen verhindert wird, die sowohl mit Krankheiten als auch mit dem Alter verbunden sein konnen.

Die Zelle eindringende Peptide können ihre Lebensdauer um 30-40% verlangern und Selbstheilungsprozesse auslosen.

Daher sind Peptidhormone an vielen biologischen Prozessen des Korpers beteiligt und spielen eine entscheidende Rolle bei der Steuerung der Funktion der meisten Organe und Systeme. In vielen Fallen sind sie unersetrluh, von denen die Existenz eines Menschen abhangt.

IMMANUEL KANTS IDEEN IN DER DEONTOLOGIE

Chawaa A. - der Student des 2. Studentienjahres
Wissenschaftliche Leiter - Doz. Matjuschenko V.S, Tkatschjowa N.A

Die Deontologie ist die medizinische Wissenschaft von den rechtlichen, moralischen und ethischen Verhaltensregeln eines medizinischen Arbeitnehmers, hauptsächlich in Bezug auf Patienten. Vom Standpunkt der medizinischen Deontologie aus ist die deontologische Theorie des deutschen Philosophen I. Kant von größtem Interesse.

Kant formuliert seine Theorie so: Handle immer nur nach einer solchen Maxime deines Willens, dass du es dir wünschen kannst, ein universelles Gesetz zu sein.

1. Es spielt keine Rolle, was die Konsequenzen sein können, es ist immer falsch zu lügen.
2. Wir sollten Menschen (einschließlich uns selbst) immer als Ziel behandeln und niemals nur als Mittel zum Zweck.
3. Die Handlung ist richtig, wenn sie den kategorischen Imperativ erfüllt.
4. Perfekte und unvollständige moralische Verpflichtungen begründen den Anspruch, dass bestimmte Rechte anerkannt werden müssen

Sagt ein Arzt einem Patienten, dass er eine schwere Krankheit hat, obwohl er weiß, dass dies nicht der Fall ist. Dies kann für ihn direkt von Vorteil sein, da die Behandlung und eine imaginäre Heilung sein Einkommen und seinen Ruf erhöhen. Das Prinzip seines Handelns kann

folgendermaßen formuliert werden: "Immer wenn ich einen gesunden Patienten habe, werde ich ihn anlügen und sagen, dass er schwer krank ist."

Kant argumentiert, dass solche Überlegungen zeigen, dass es immer falsch ist zu lügen. Lügen erzeugen einen Widerspruch in dem, was wir uns wünschen. Einerseits wünschen wir, dass die Menschen an das glauben, was wir sagen - dass sie unsere Zusicherungen und Versprechen akzeptieren. Andererseits möchten wir, dass die Menschen frei sind, um falsche Zusicherungen und falsche Versprechungen abzugeben. Lügen sind selbstzerstörerisch

ENTWICKLUNGSMOGLICHKEITEN VON WILLIS-KREIS

Dzyga K. — der Student des 2. Studentienjahres
Wissenschaftliche Leiter: K.m.W. Selewjorstow S.S., Tkatschjowa N.A

Das Gefäßsystem des Gehirns hat eine komplexe Struktur. Eine der wichtigsten Komponenten ist der Willis-Kreis.

Der Willis-Kreis ist der Arterienkreis des Gehirns, der sich an der Basis des Gehirns befindet und den Mangel an Blutversorgung aufgrund von Überläufen aus anderen Gefäßpools ausgleicht. Der Kreis ist nach dem englischen Arzt Thomas Willis benannt.

Laut medizinischer Statistik haben nur 35—45% der Menschen den klassischen Arterienkreis, wie er in anatomischen Atlanten beschrieben ist. Verschiedene Autoren geben an, dass „nicht-klassische“ Varianten der Struktur des Willis-Kreises in 25 bis 75% der Fälle vorkomm

Andere strukturelle Optionen, die für den Willis-Kreis spezifisch sind:

1. Unterentwicklung der Bindegewebsarterie. Es fungiert als Brucke, die Gehirngefäße verbindet. Aufgrund dieser Struktur tritt eine schnellere Blutbewegung auf. Eine solche Anomalie ist relativ selten und macht nicht mehr als 2,5% der Gesamtmasse der Fälle aus.
2. Die Abwesenheit oder Unterentwicklung der vorderen Arterie im vorderen Abschnitt
3. Fehlen oder Unterentwicklung der A. posterior im vordenen Abschnitt.
4. Trifurkation (Unterteilung in 3 Äste) der Arterie, häufig der Carotis interna im posterioren Bereich. Es tritt mit einer Häufigkeit von 19% der Fälle auf.
5. Aplasie (Abwesenheit an Teilen) der Arterien, meistens des hinteren Bindegewebes. Es tritt mit einer Häufigkeit von 17,5% der Fälle auf.

Die häufigste davon ist die Trifurkation. Sie tritt in jenem Teil der A. carotis interna auf, der als supraclavicular bezeichnet wird (wenn 3 Hirnarterien von diesem Fragment ausgehen) und im vorderen Teil - beide vorderen Hirnarterien beginnen von der Carotis aus.

Das zweithäufigste Vorkommen ist eine Aplasie einer oder beider hinteren Verbindungsarterien. Eine unilaterale Aplasie der hinteren Bindegewebsarterie ist häufiger als eine bilaterale beobachfet. Das Fehlen der hinteren Bindegewebsarterien wird 6-mal häufiger beobachtet als das Fehlen der vorderen Bindegewebsarterie

KERNKRAFTWERK «FUKUSHIMA-1». ANGESICHST DER LETZTERN ENTWICKLUNGEN

Dzyga K. — der Student des 2. Studentienjahres
Wissenschaftliche Leiter: K.b.W. Guba L.A., Tkatschjowa N.A

Die Führungskrafte des Kernkraftwerks «Fukushima-1» wurde wegen einer nuklearen Katastrophe unschuldig bekkent.

Die Führungskrafte von Tokyo Elektrishe Energie, dem Betreiber des japanischen Kernkraftwerks Fukushima-1, wurde im März 2011 bei einer Katastrophe in einem Kraftwerk für nicht schuldig befunden. Ein solches Urteil erließ das Bezirksgericht Tokio am 19. September 2019.

Ich möchte Sie daran erinnern, dass sich der Unfall im Kernkraftwerk nach einem starken Erdbeben und einem Tsunami ereignete.

Die Richter haben den ehemaligen TEPCO-Vorsitzenden Tsunahisa Katsumatu und zwei seiner Kollegen freigesprochen, die in Fahrlässigkeit und Untätigkeit beschuldigen wurden. Die Behörden haben Ansicht, dass die Top-Manager nicht über das drohende Elementkeinen Bescheid haben, deshalb ergriffen sie daher nicht alle möglichen Maßnahmen, um die Tragödie zu verhindern.

Japan beschloss, radioaktives Wasser aus dem Kernkraftwerk Fukushima-1 in den Ozean zu gießen.

Japan beabsichtigt, Wasser in den Pazifischen Ozean zu gießen, um die beschädigten Reaktoren des Kernkraftwerks Fukushima-1 zu kühlen. Die Behörden des Landes sagten, dass dies keine Probleme für die Sicherheit von Menschen und Meerestieren schaffen würde. Aber die Opposition und die südkoreanische Regierung denken anders.

In 8 Jahren haben sich in der Station mehr als hundert Tonnen Wasser angesammelt, die zur kontinuierlichen Kühlung beschädigter Reaktoren verwendet werden. Es gibt immer mehr flüssige Abfälle, und bis zum Sommer 2022 wird es keinen Ort mehr geben, an dem sie gelagert werden können. Daher wurde vorgeschlagen, Wasserauflastung mit einem geringen Grad an Radioaktivität in den Ozean zu beginnen.

Haben diese beiden jüngsten Ereignisse einen Zusammenhang oder ist es ein Zufall? Diese Frage bleibt offen ...

MERKMALE DES AKUTEN KORONARSYNDROMS IN KOMBINATION MIT CHRONISCH OBSTRUKTIVER LUNGENERKRANKUNG

Dirtschin D. — die Studentin des 3. Studienjahres
Wissenschaftliche Leiter: K.m.W. Skljar I.V., Tkatschjowa N. A.

Ziel: Risikofaktoren und klinische Merkmale bei Patienten mit akutem Koronarsyndrom in Kombination mit chronischer Lungenerkrankung zu untersuchen.

Die Analyse von 68 Krankengeschichten von Patienten mit akutem Koronarsyndrom, die in den Notaufnahme der Kardiologie MBUZ skk Blagoweschtschensk in der Zeit von 2010 bis 2012 behandelt wurden, wurde durchgeführt. Alle Patienten wurden in zwei Gruppen eingeteilt, die nach Geschlecht und Alter vergleichbar sind. Die erste Gruppe (32 Personen) waren

Patienten mit akutem Koronarsyndrom in Kombination mit chronisch obstruktiver Lungenerkrankung, die zweite Gruppe von Patienten mit akutem Koronarsyndrom ohne eine Geschichte von chronisch obstuktiver Lungenerkrankung. Bei allen Patienten wurden die Daten der klinischen und Laboruntersuchung, Echodoppierkardiographie, Elektrokardiographie, Spirograplur. Der systolische Druck in der Lungenarterie wurde durch die Geschwindigkeit des Strahls der trikuspidalen Aufstockung (permanent-Welle Doppler) bestimmt. Die statistische Verarbeitung der Ergebnisse wurde mit Hilfe des Programms «Statistica 6,0»durchgeführt.

Die von uns durchgeführte Analyse zeigte daher, dass der kombinierte Verlauf des akuten Koronarsyndroms und der chronisch obstruktiven Lungenerkrankung durch allgemeine Risikofaktoren, den atypischen Verlauf des Myokardinfarkts und den hohen Anteil an Komplikationen gekennzeichnet ist.

ANWENDUNG DER SU JOK-THERAPIE BEI DER BEHANDLUNG DER LOGONEUROSEN BEI DEN KINDERN

Tarassowa Ja. — die Studentin des 4. Studienjahres
Wissenschaftliche Leiter: E.E. Moltschanowa, N.A. Tkatschjowa.

Stottern ist eine Neurose, bei der die Glatte und Kontinuitat der Sprache durch das Auftreten von Krampfbewegungen in den am Sprechakt beteiligten Muskeln beeintrachtigt wird. Stottern ist in der Regel das Ergebnis der Manifestation der pathogenen Energie der Kalte auf emotionaler und mentaler Ebene.

Die Behandlung von Stottern muss man mit der Hemmung der Energie der Angst auf emotionaler Ebene oder der Weisheit auf mentaler Ebene beginnen.

Eine wesentliche Voraussetzung fur eine erfolgreiche Behandlung, ist die Verstarkung der Emotionen von Freude und Zufriedenheit.

Wahrend der Behandlung ist es wichtig, die spirituelle Sphare zu beeinflussen, die durch das Tschakra des Lichts realisiert werden kann.

Die Vermeidung von Stresssituationen beim Kind wahrend der Behandlung und die Beseitigung von padagogischen Fehlern bei Eltern und Lehrern schaffen den notwendigen emotionalen positiven Hintergrund und tragen zur erfolgreichen Behandlung von Stottern bei.

STRUKTURMERKMALE DES ZENTRALNERVENSYSTEMS BEI GENIES

Gan D. — der Student des 2. Studenjares
Wissenschaftliche Leiter: K.m.W Semjonow D.A., Tkatschjowa N.A.

Genies können entweder Vollgenies sein oder geniale Talente in einer oder mehreren Richtungen besitzen. So sollte das Zentralnervensystem eines Genies als Organ des Geistes und der Seele nicht in einem schmerzhaften Zustand sein, sondern in der Struktur seiner Nervenelemente die höchste Vollkommenheit der Norm sowohl in der Struktur der Nervenzellen als auch im Verhältnis ihrer Einzelteile und Partikel und in ihrer Ernährung aufweisen . Nicht nur das. In der Welt muss alles verbessert, entwickelt und weiterentwickelt werden. Die nervösen Elemente des Zentralnervensystems eines Genies repräsentieren den

Entwicklungsfortschritt für eine gegebene Menschheit; Daher sind sie perfekter, voller und am besten gebaut als andere Menschen. In Anbetracht dieser Vollkommenheit muss die Anordnung der nervösen Elemente des Nervensystems des Genies und dessen Aussendung, dh des Geistes und der mentalen Kräfte, höher, voller, mächtiger und vollkommener sein als die anderer Menschen. Die Höhe und Perfektion dieser spirituellen Fähigkeiten wird eng mit der Höhe, Perfektion und Verbreitung über die übliche Ebene des Zentralnervensystems verbunden sein.

DIE PHYSIOLOGIE DER ZELLE

Iwantscho A. — die Studentin des 2. Studienjahres
Wissenschaftliche Leiter: Gassanowa S.N., Tkatschjowa N.A.

Die Zelle ist eine selbstregulierende strukturelle und funktionelle Einheit von Geweben und Organen. Die Zelltheorie uber Struktur von Organen und Geweben wurde von Schleiden und Schwann im Jahre 1839 entwickelt. Später gelang es mit Hilfe der Elektronenmikroskopie und Ultrazentrifugierung die Struktur aller wichtigen Organellen von Tier-und Pflanzenzellen herauszufinden.

Die Hauptteile der Zelle sind das Zytoplasma und der Kern. Jede Zelle ist von einer sehr dünnen Membran umgeben, die Ihren Inhalt begrenzt.

Die Zellmembran wird Plasmamembran genannt und ist durch selektive Durchlassigkeit gekennzeichnet. Diese Eigenschaft ermöglicht es, den essentiellen Nährstoffen und chemischen Elementen in die Zelle zu gelangen und überschüssige Produkte zu verlassen. Die Plasmamembran besteht aus zwei Schichten von lipidmolekülen mit der Aufnahme spezifischer Proteine darin. Die wichtigsten Lipide der Membran sind Phospholipide. Sie enthalten Phosphor, einen polaren Kopf und zwei unpolare Schwänze aus langkettigen Fettsäuren. Membranlipide umfassen Cholesterin und Cholesterinester. Der flüssig-Mosaik-Modell nach, enthalten die Membran die Proteine und Lipid-Molekülen, die sich relativ Doppelschicht bewegen können. Für jede Art von Membranen jeder Tierzelle ist Ihre relativ konstante Lipidzusammensetzung charakteristisch.

Der innere Raum der Zelle ist mit Zytoplasma gefüllt, in dem die meisten enzymkatalysierten Reaktionen des Zellstoffwechsels auftreten. Das Zytoplasma besteht aus zwei Schichten: dem inneren endoplasma und dem peripheren Ektoplasma, das eine hohe Viskosität aufweist und frei von Pellets ist. Im Zytoplasma befinden sich alle Komponenten einer Zelle oder Organellen. Die wichtigsten Organellen der Zellen sind-Endoplasmatisches Retikulum, Ribosomen, Mitochondrien, Golgi-Apparat, Lysosomen, Mikrofilamente und Mikrotubuli, Peroxisomen.

LAJELL-SYNDROM BEI DEN KINDERN

Tarassowa Ja. — die Studentin des 4. Studienjahres
Wissenschaftliche Leiter: N.E. Melnitschenko, N.A. Tkatschjowa.

Schwere immunallergische Erkrankung, bei der es sich um eine akute haut-viszerale Erkrankung handelt, verlauft mit Ablösung und Nekrose der Epidermis, mit der Bildung schlaffer Blasen und Erosion der Haut und der Schleimhäute.

Die Ursache ist oft Sulfa-Medikamente, vor allem mit Langzeitwirkung, weniger häufig Antibiotika (Penicillin, Streptomycin) und Pyrazolone-Derivate (Antipyrin, Analgin).

Die Ursache für die Entstehung dieses Syndroms ist auch die erbliche Veranlagung des Körpers zu allergischen Reaktionen auf den Infektionsprozess.

ABHÄNGIGKEIT DER PARAMETER DER OBEREN UND UNTEREN EXTREMITÄTEN VOM MENSCHLICHEN SOMATOTYPUS

Chawaa A., Ojun S. - die Studenten des 2. Studentienjahres
Wissenschaftliche Leiter -K.m.W. Schakalo J.A., Tkatschjowa N.A.

Somatotypus , Körpertyp, bestimmt auf der Grundlage anthropometrischer Messungen (Somatotyping), und ist genotypisch bestimmt, hat konstitutioneller Typus und wird durch das Niveau und die Eigenschaften des Stoffwechsels (vorherrschende Entwicklung von Muskel-, Fett- oder Knochengewebe) charakterisiert. Es hat eine Tendenz zu bestimmten Krankheiten sowie psychophysiologische Unterschiede. Der Körperbau eines Menschen verändert sich im Laufe seines Lebens, während der Somatotyp genetisch determiniert ist und sein beständiges Merkmal von der Geburt bis zum Tod ist. Altersbedingte Veränderungen, verschiedene Krankheiten, erhöhte körperliche Aktivität verändern die Größe, Form des Körpers, aber nicht den Somatotypus.

Bis heute gibt es zahlreiche Modifikationen der Somatotypisierung, zum Beispiel M. V. Tschernorutski (Pinier Index), der traditionell in der medizinischen Praxis zur Bezeichnung von Konstitutionstypenus verwendet wird.

Bei diesem Schema werden die folgenden drei Typen unterschieden:
Normostenischer Typus wird durch proportionale Körpergröße und harmonische Entwicklung des Bewegungsapparates gekennzeichnet;
Der **asthenische Typus**, der sich durch einen schlanken Körper auszeichnet, eine schlechte Entwicklung des Muskelsystems, das Überwiegen (im Vergleich zu normosthenischen) von Längskörpergrößen und Brustgrößen über die Größe des Abdomens; Gliedmaßenlänge - über die Körperlänges unterscheidet.

Der **hypersthenische Typus**, der sich vom normosthenischen Typ in guter Fettigkeit, einem langen Körper und kurzen Gliedmaßen unterscheidet, ist das relative Übergewicht der transversalen Körpergrößen, der Bauchgrößen gegenüber der Größe der Brust.

Der **Pinier-Index** ist ein Indikator für die körperliche Entwicklung einer Person, der durch Subtraktion des Körpergewichts (Masse) (in kg) und des Brustumfangs (in cm) von der Körperlänge (in cm) erhalten wird.
M.V. Chernorutskj schlug vor, die Art der Konstitution durch den Index der körperlichen Entwicklung (Pinier-Index) zu definieren, der durch die Formel bestimmt wird:
PI = L - (P + T), wobei **L** die Körperlänge (cm) ist,
P - Körpergewicht (kg), **T** - Brustumfang (cm).

Bei Hypostenikern (asthenischer Typus) beträgt dieser Index mehr als 30, bei Hypersthenikern (Picknicktypus) weniger als 10 und bei Normostenikern (athletischer Typus) 10 bis 30.

ERDBEBEN IN PHILIPPINEN

Kukuschkin A., Nikonow K. — die Studenten des 2.Studienjahres

Wissenschaftliche Leiter -K.b.W. Guba L.A., Tkatschjowa N.A.

Die Zahl der Todesopfer wegen zwei Erdbeben, die diese Woche die philippinische Insel Mindanao erschütterten, ist 21 Menschen. Dies wurde am Sonntag, dem 3. November, unter Berufung auf einen Bericht des National Disaster Risk Reduction and Response Council (NDRRMC) bekannt gegeben.

Darüber hinaus waren 432 Menschen vom Erdbeben betroffen.

Der Veröffentlichung nach befinden sich 4362 Familien in 20 Evakuierungszentren in Notunterkünften.

Am 29. Oktober wurden neun Tote infolge einer Naturkatastrophe gemeldet. Unter den Opfern der Katastrophe befanden sich Kinder und Jugendliche, die bei der Evakuierung von Schulen in Trümmern lagen.

Die Stärke des Erdbebens betrug 6,6. Die U-Bahn-Punkte wurden um 9:04 Uhr Ortszeit (4:04 Uhr Moskauer Zeit) aufgezeichnet. Der Schwerpunkt lag in einer Tiefe von ca. 7 km. Später registrierte das seismologische Zentrum Europa-Mittelmeer Schwingungen der Größen 5,2 und 5,1 in 58 km nordwestlich der Stadt Davao.

Erdbeben-Richtlinien

Wenn ein Erdbeben eintritt, beben erheblich die Erde und die Gebäude für kurze Zeit: von einigen Sekunden bis zu einer Minute. Wenn Sie ruhig und nachdenklich handeln, erhöhen Sie Ihre Chancen, sich zu schützen. Darüber hinaus wird Ihr Seelenfrieden auf andere übertragen und wird Jhnen helfen.

Bitte befolgen sie Regeln:

1. Beruhigen Sie sich und tun Sie nichts, was andere aus der Ruhe bringen könnte (nicht schreien sie oder hetzen sie nicht).
2. Wenn Sie drinnen sind, halten Sie sich von Fenstern und Öfen fern. En Sie vor von oben herabfallenden Gegenständen.

FOLGEN EINES BRANDES IM AMAZONAS

Toropowa M.- die Studentin des 2. Studienjahres

Wissenschaftliche Leiter -K.b.W. Guba L.A., Tkatschjowa N.A.

Seit mehrere Wochen brennt in Brasilien und angrenzenden Ländern der Regenwald. Betroffen sind Flächen in Privatbesitz, aber auch in Naturschutzgebieten und Gebieten der indigenen Bevölkerung. Experten befürchten, dass es noch Wochen dauern wird, bis die Feuer gelöscht sind.

Manche Ökosysteme sind zur Regeneration sogar darauf angewiesen - der Regenwald gehört jedoch nicht dazu. Auch im Amazonas kommt es, insbesondere in Dürrejahren, vereinzelt zu natürlichen Bränden, zum Beispiel durch Selbstentzündung. Forscher gehen davon aus, dass Landgewinnungsmaßnahmen maßgeblich dazu beigetragen haben.

Seit den 1990er-Jahren wird die Anzahl der Brandausbrüche von verschiedenen Forschungseinrichtungen per Satellit ermittelt. Die Daten geben aber kein Bild von der Intensität und der Größe der Brände. In Bezug auf die absolute Anzahl gehört 2019 bisher nicht zu den Jahren mit den meisten Bränden.

Nach Angaben des Copernicus-Programms zur Umweltüberwachung der European Space Agency wurden bei den Bränden bis zum 24. August 228 Megatonnen Kohlendioxid erzeugt - der höchste Wert seit Beginn der Messungen im Jahr 2010.

Am 16. August meldete die NASA, dass laut einer Analyse von Satellitendaten die gesamte Feueraktivität im Amazonasbecken in diesem Jahr im Vergleich zu den letzten 15 Jahren nahe am Durchschnitt lag. Mitte August ist jedoch erst der Beginn der jährlichen Feuersaison. Ein Großteil der Brände brach erst danach aus. Bereits am 26. August lag die Zahl der Feuer um gut 75 Prozent über dem Wert des Vorjahrs.

Der Amazonas gilt als "Grüne Lunge" der Welt. Immer wieder wird behauptet, dass er 20 Prozent des Sauerstoffs auf der Welt "produziert". Tatsächlich stammt ein Teil des weltweit bei der Photosynthese frei werdenden Sauerstoffs aus dem Amazonas.

EIN INTERESSANTER FALL AUS DER PRAXIS EINES KINDERARZTES: IV. GRAD DER FETTLEIBIGKEIT BEI EINEM KIND VON 4 JAHRE

Axenowa M.- die Studentin des 3. Studienjahres
Wissenschaftliche Leiter: Shurawljowa O.V., Tkatschjowa N.A.

Die Fettleibigkeit ist eine chronisch wiederkehrende Krankheit, die durch eine übermäßige Ansammlung von Fettgewebe im Körper gekennzeichnet ist. Die WHO betrachtet Adipositas als eine Epidemie: Über 250 Millionen adipöse Patienten sind weltweit registriert. In wirtschaftlich entwickelten Ländern sind 10-16% der Kinder und Jugendlichen fettleibig, ein Anstieg der Fettleibigkeit wird in allen Altersgruppen erwartet.

Ein interessanter Fall: Ein Kind im Alter von 4 Jahren wurde mit einer Adipositasdiagnose des Grades III-IV in die Kinderklinik eingeliefert. Beschwerden zum Zeitpunkt der Aufnahme: Übergewicht, allgemeine Schwäche, Mundtrockenheit. Aus der Anamnese dieser Krankheit: On Geburt anisteskrank, von einem Endokrinologen wird beobachtet, im letzten Jahr hat 10 kg zugenommen. Aus der Anamnese des Lebens ist bekannt, dass es wird pünktlich geboren, in der postnatalen Zeit wurden keine besonderen Abweichungen festgestellt. Von den durchgemachten: OKI. Gegenwärtig nimmt der Appetit zu, wenn die Diät nicht eingehalten wird.

Eine objektive Untersuchung: ein Kind hat erhohte Ernährung. Die subkutane Fettschicht ist übermäßig stark ausgeprägt. Körperliche Entwicklung: Größe-114; Gewicht- 40 kg. BMI: 31, disharmonisch, aufgrund von Übergewicht, entspricht dem Alter von 5,5 Jahren, Pass- 4.6. Die Schilddrüse ist bis zu 1 Grad elastisch. Knoten sind nicht tastbar. Osteoartikuläres System: Die Haltung ist korrekt. Die Achse der Wirbelsäule wird nicht abgelenkt. Die Gelenke werden optisch nicht verändert. X-förmige Krümmung der unteren Extremitäten. Von anderen Organen und Systemen wird keine Pathologie beobachtet. Empfehlungen: Diät Nummer 8;

medikamentöse Behandlung: Nootrope, Lipotrope Medikamente; Bewegungstherapie; Physiotherapie; Massage Psychotherapie.

Dieser Fall ist insofern interessant, als Fettleibigkeit vom III-IV-Grad nur bei 2% der übergewichtigen Patienten selten ist. In diesem Fall übersteigt das Gewicht des Kindes 100%., Das Kind muss jedoch keine vorbeugenden Maßnahmen gegen Fettleibigkeit im Kindesalter ergreifen; Eltern, Ärzte und Lehrer / Erzieher sollten einbezogen werden.

Der erste Schritt ist, dass die Eltern verstehen müssen, wie wichtig richtige Ernährung und ein gesunder Lebensstil sind. Es ist notwendig, das Kind in angemessenen Essgewohnheiten zu erziehen und sein tägliches Regime mit dem erforderlichen Maß an körperlicher Aktivität zu organisieren.

Der zweite Schritt besteht darin, das Interesse des Kindes an Sport und Sport zu fördern. Dies sollte nicht nur von Lehrern und Eltern getan werden. Die Eltern selbst sollten ein Beispiel für einen gesunden Lebensstil sein, nicht Diktatoren, die eins sagen, aber das Gegenteil tun. Es müssen Screening-Programme entwickelt werden, um Adipositas und deren Komplikationen bei Kindern und Jugendlichen zu identifizieren.

Polyzystische Nierenerkrankung. Ätiologie, Pathogenese, klinische Manifestationen. Diagnose. Behandlung. Thesen.

POLYZYSTISCHE KRANKHEIT DER NIEREN. AETIOLOGIE, PATHOGENESE, KLINISCHE MANIFESTATION

Orobij O. — die Studentin des 4.Studienjahres
Wissenschaftliche Leiter: Kissiljow O.A, Tkatschjowa N.A.

Polyzystische Krankheit, ist eine Erbkrankheit, die zur Gruppe der zystischen Nierenerkrankungen gehört. Durch eine Störung der Strom des Urins ist gekennzeichnet. Die Substitution von nierenparenchym mehrfachen kavitären Läsionen ist entdeckt, wird mit Flüssigkeit gefüllt (Zysten).

Klassifizierung von Polyzysten. Autosomal-rezessiv: Neugeborene bei Kindern, Autosomal-dominant bei Erwachsenen;

Medulläre zystische Krankheit (Fanconis Nephronophysis);

multizystische Niere mit segmentalen zystischen Dysplasie, fokale Zysten (Solitär, parapelvikal, etc.), erworbene zystische Krankheit.

Klinische Manifestationen. Schmerzen. Hämaturie (das auftreten von Blut im Urin). Zunehmende allgemeine Schwäche, Appetitlosigkeit, Müdigkeit, Harngrosse Menge von, Juckreiz der Haut, erhöhter Blutdruck, Abnehmen, verminderter Appetit, Übelkeit, Erbrechen, Stuhlstörungen sind bemmerkt.

Bei polyzystischer Nierenerkrankung sind Komplikationen möglich:

-Entzündung der Zyste oder Pyelonephritis-Infektion. Da die Zyste ein geschlossener Raum ist, ist die Wahrscheinlichkeit einer Eiterung der infizierten Zyste hoch.

- Herzrhythmusstörungen. Aufgrund dieser Verletzung der Elektrolytzusammensetzung des Blutes, insbesondere der Verletzung der Ausscheidung von Kalium, Hyperkaliämie.

- Ruptur der Zyste.

SYNDROM VON PSYCHISCHEN STÖRUNGEN

Orobij O. Bagautdinowa Ju. — die Studentinnen des 4.Studienjahres
Wissenschaftliche Leiter: Archipowa M.I., Tkatschjowa N.A.

Syndrom von psychischen Störungen im Falle einer Psychose mit schizophrenähnlichen Symptomen in Gegenwart von assoziiertem Stress.

1. Die Bewegung der psychopathologischen Syndrome.
Drei Formen Ihrer Dynamik: Syndromokinese, Transformation, Uberlappung von Syndromen.
2. Polymorphe psychische Störung und zwei Formen: akute polymorphe psychische Störung ohne Symptome von Schizophrenie, akute polymorphe psychische Störung mit Symptomen von Schizophrenie.
3. Ein interessanter klinischen Fall des echten Patienten mit der Diagnose: "Akute polymorphe psychische Störung mit Schizophrenie-Symptomen in Gegenwart von assoziiertem Stress. Halluzinatorisch-paranoidales Syndrom (Kandinsky-Clerambo)".

DIEROLLE DERGELENKEIMMENSCHLICHENKÖRPER

Bondarewa A.- die Studentin des 1. Studienjahres
Wissenschaftliche Leiter: D.m.W. Grebenjuk V.V. Tkatschjowa N.A.

Ein Gelenk ist ein bewegliches Gelenk mit zwei oder mehreren Knochen eines Skeletts. Die Grundlage der Struktur eines lebenden Organismus ist das Skelett, das bewegliche Verbindungen sowie Knochen-und Knorpelgewebe umfasst.

Menschliche Gelenke sind wichtig und notwendig, um zu gehen und komplexe und harmonische Bewegungen in der täglichen Arbeit und beruflichen Aktivitäten durchzuführen.

Arthrologie heißt eine komplexe Wissenschaft, die alle Arten von Anastomosen mit Knochen untersucht.

Menschliche Gelenke sind in drei Gruppen unterteilt. Die erste bieten eine Feste Artikulation der Knochen (Synarthrose). Sie befinden sich zwischen den Schädelknochen. Die zweite Gruppe der Gelenke ist Amphiarthrose,und hat eingeschränkte Mobilität. Dazu gehören die Gelenke der Wirbelsäule. Die zahlreichste Gruppe von Gelenken sind Diarthrose oder echte Gelenke sie sind völlig beweglichigerade Dank ihnen können wir körperlich aktiv sein .

Die Gelenke vereinen die Knochen des Skeletts zu einer Einheit. Mehr als 180 verschiedene Gelenke helfen dem Menschen, sich zu bewegen. Zusammen mit den Knochen und Bändern werden Sie dem passiven Teil des motorischen Apparates zugeordnet. Die Gelenke können mit den Gelenken verglichen werden, deren Aufgabe darin besteht, sicherzustellen, dass die Knochen relativ zueinander glatt gleiten. In Ihrer Abwesenheit werden die Knochen einfach aneinander reiben und allmählich zusammenbrechen, was ein sehr schmerzhafter und gefährlicher Prozess ist. Im menschlichen Körper spielen Gelenke eine große Rolle.Verschiedene Arten von menschlichen Gelenken, Ihre vielfältige anatomische Konstruktion sind von grundlegender Bedeutung für eine Reihe von funktionellen Aufgaben, die von knochenverbindungen ausgeführt werden. Alle Aktionen sind in die Ausführung von Funktionenwie:

* Die Kombination von Knochen, Zähnen und Knorpel ,machtsieeinen festen Bewegungsdämpfer.
* Verhinderung der Zerstörung von Knochengewebe.
* Ausführung von axialen Bewegungen, darunter: frontal-Flexion, Dehnung, sagittal-Umwandlung, Ableitung.

Gelenkerkrankungen sind die häufigsten Beschwerden des 21.Jahrhunderts. Nach Angaben der Weltgesundheitsorganisation an Schmerzen in den Gelenken leidet jeder 7-TEN Bewohner des Planeten. Im Alter von 40 bis 70 Jahren werden Gelenkerkrankungen bei 50% der Menschen und bei 90% der Menschen über 70 Jahrenbeobachtet. Verzögerungen bei der Behandlung von Gelenkerkrankungen können zu Komplikationen in Form von anhaltenden akuten Schmerzen, eingeschränkter Mobilität und infolgedessen zu einer Operation oder Behinderung führen.

RETROPERITONEALE FIBROSE (ORMOND-KRANKHEIT)

Bagautdinowa Ju. — die Studentin des 4.Studienjahres
Wissenschaftliche Leiter: Kissiljow O.A, Tkatschjowa N.A.

Retroperitoneale Fibrose (Ormond — Krankheit) ist ein unspezifischer Entzündungsprozess im retroperitonealen Gewebe mit der Bildung von fibrösem Gewebe, das Kompression des Harnleiters und anderen nahe gelegenen Strukturen verursacht.

Ätiologie**.** Retroperitoneale Fibrose ist eine Folge der unspezifischen Entzündung vieler Organe.

Pathogenese**.** Bei der histologischen Untersuchung von veränderten retroperitonealen Ballaststoffen wird eine chronische Entzündung in Phasen unterteilt.

Die 1. Phase ist diffuse Zellinfiltration.

Die zweite Phase manifestiert sich durch Bindegewebsfaserveränderungen.

In der dritten Phase wird Sklerose des fibrosen Gewebes beobachtet.

Symptomatik und klinischer Verlauf. Die Symptomatik der retroperitonealen Fibrose ist arm an Symptomen.

Diagnose. Überblick über die Harnwege, Ausscheidungsurographie, retrograde Ureteropyelographie, perkutane Antegradspyeloreterographie, Ultraschall der Nieren.

Differentialdiagnose. Es wird mit bilateraler Hydronephrose, Harnleiterstriktur, Achalasie der Harnleiter differenziert.

Behandlung. Bei retroperitonealer Fibrose hängt die Behandlung von der Lokalisation des Prozesses, seiner Prävalenz, dem Grad der Verletzung der Urinpassage, dem Vorhandensein einer Harninfektion ab.

SECTION du FRANCAIS et du LATIN

ВРАЧЕВАНИЕ В СРЕДНИЕ ВЕКА

Сороковикова А. — 1 к.
Руководитель: Шпильчук Л.И.

Средневековое общество всегда находилось на грани жизни и смерти. Медицина развивалась медленно, накопления новых знаний практически не происходило.

В Раннее Средневековье появились первые больницы. Вначале они организовывались при церквях и монастырях. В позднем Средневековье больницы стали открываться состоятельными горожанами.

Развивалась практическая медицина, которой занимались цирюльники. В их обязанности входили: кровопускания, вправления суставов, ампутации.

Позже потребность в медпомощи начала возрастать. Отныне цирюльники должны были пройти восьмигодичное обучение и сдать.

Со временем лечебное дело стало требовать профессиональной подготовки, которой занимались медицинские учебные заведения. Чтобы стать врачом, средневековому студенту нужно было сначала получить духовное или светское образование, состоявшее из «семи свободных искусств».

Средневековые врачи были хорошо осведомлены о строении тела, симптомах множества заболеваний. Разрешалось проводикть вскрытие трупов.

Распространялась вера, что большинство человеческих болезней — результат избытка жидкости в теле. Развивалось лечение, состоящее в откачивание крови из тела. Для этого использовалось два метода: гирудотерапия и вскрытие вен.

Деторождение считалось летальным действом, как для матери, так и для плода. Мертвого ребенка резали на кусочки прямо в матке и вытаскивали кюветкой.

Также Средние века прославились крестовыми походами, где на разоренных территориях свирепствовали эпидемии. Наиболее распространенными были чума, лепра и дизентерия. Эпидемии способствовали появлению карантина и открытию лазаретов и лепрозорий.

Помимо болезней, распространенной патологией были заболевания нервной системы и различные уродства. Новорождённых детей с патологиями убивали.

С одной стороны, средневековая медицина развивалась в тяжелых условиях, с другой же — именно эти обстоятельства способствовали революционным изменениям и переходу от медицины Средневековья к медицине Возрождения.

РИМСКИЙ ТЕАТР

Шестакова В. — 1 к.
Руководитель: Шпильчук Л. И.

Римское театральное искусство уникально в своем роде. Оно практически единственное, которое не берет свое начало с обрядово-ритуальных сценических действий. Римский театр изначально был профессиональным. В нем вовсе не просматривался культ божества. Поэтому неудивительно, что римский театр не имел большого влияния на сознание общественности, а был всего лишь развлечением и

способом приятного веселого времяпрепровождения. В римском сценическом действии главной была зрелищность, а не суть концепции представления или глубокий внутренний мир героев.

Древнеримский театр отличался зрелищностью и торжественностью. Такая грандиозность достигалась путем участия огромного количества статистов, облачавшихся в яркие костюмы, украшенные настоящими драгоценными камнями. Использовались также настоящие доспехи и разнообразное оружие. Актерское исполнение не отличалось мастерством, женские роли исполнялись мужчинами и были достаточно примитивными. Стоит подчеркнуть, что практически во всех жанрах, помимо ателланы, актеры играли без масок, но активно использовали парики и яркий грим. Отказ от масок нарушал общий условный стиль спектакля. Но табу на маски было вынужденным, так как профессия актера была позорной, и считалось, что участник сценического действия, получивший жалование за него должен был выходить на публику с открытым лицом. Отказ от масок обеспечивал монополизированное право на игру в масках римской молодежи, которая развлекалась, участвуя в постановках ателланы. Древнеримская театральная маска отличалась от греческой тем, что она имела большие отверстия для рта и глаз, что способствовало более выразительной мимике.

Следует назвать и еще древнейший вид драматического действия - мим. Первоначально это была грубоватая импровизация, исполнявшаяся на итальянских праздниках в частности на весеннем празднике Флоралий, а впоследствии мим стал литературным жанром. Самыми известными представителями комедии паллиата являются римские драматурги Плавт и Теренций.

МИФОЛОГИЧЕСКИЕ МОТТИВЫ В НАЗВАНИЯХ ЛЕКАРСТВЕННЫХ РАСТЕНИЙ

Асхатхузина В.- 1 к.
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 И ЕГО ВКЛАД В МЕДИЦИНУ

Яковец Н., Пешкова А- 1к.
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”.

ЛАТИНСКИЙ И ГРЕЧЕСКИЙ ЯЗЫКИ В ИМЕНАХ СОБСТВЕННЫХ

Касторина А. - 1 к.
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.

ЛАТИНСКИЙ ЯЗЫК — ЯЗЫК МЕДИЦИНЫ

Затолокина Д. — 1к
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.

ЛАТИНСКИЕ ЗАИМСТВОВАНИЯ В РУССКОМ ЯЗЫКЕ

Туркова Д., Туркова А. — 1 к.
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.

ЛАТИНСКИЙ ЯЗЫК В ТАБЛИЦЕ МЕНДЕЛЕЕВА

Лысак С. -1 к.
Руководитель: Шпильчук Л. И.

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).

ПЕРВЫЕ ЛЕКАРСТВЕННЫЕ СРЕДСТВА ДРЕВНЕЙ ГРЕЦИИ И ДРЕВНЕГО РИМА

Шубникова С. — студентка1 курса
Руководитель: Субачева Н.А.

Лекарственные средства в Древней Греции

Основным источником сведений о состоянии медицины в Греции был сборник трудов Гиппократа (460 - 370 гг. до н.э.).

Гиппократ впервые и последовательно показал неразрывное единство организма и окружающей природы. Он призывал лечить больного, а не болезнь, придавая большое значение лечению природными средствами.

Древнегреческие врачи изготовляли и применяли: порошки, лепешки (концентраты-полуфабрикаты), жидкие лекарственные формы (припарки, супы); глазные лекарственные формы, мягкие лекарственные формы (внутрь применяли кашки); наружно - мази, пластыри; суппозитории в форме шарика, желудя, свечи; пессарии (тампоны из шерсти, пропитанные лекарственной смесью). Основами для мазей служили мед, масло, сало, сгущенные соки и отвары в воде или вине.

Лекарственные средства в Древнем Риме

В древнеримской медицине выделился как крупнейший врач и естествоиспытатель Клавдий Гален (130 - 200 гг. н. э.).

Гален отверг взгляды Гиппократа на растения и указал, что в растительном сырье наряду с полезными веществами содержатся ненужные, а порою и вредные. Он старался извлечь из растений полезные вещества, используя их в виде таких лекарственных форм, как настои, отвары, настойки.

Отваром горлянки (наша тыква древним была неизвестна) укрепляли расшатавшиеся зубы, он же помогал от зубной боли. Раны хорошо смазывать таким снадобьем: «возьми горлянку целиком, запеки ее и разотри вместе с гусиным жиром». Если болят ноги, к ним надо прикладывать сырую репу, истолченную вместе с солью. От кашля помогает редька с медом, надо есть ее по утрам натощак. Отваром красной свеклы моют голову при парше. Весной следует есть крапиву: это предохранит на целый год от болезней. Отваром ее лечат кашель и простуду.

ЭТИМОЛОГИЯ В СИМВОЛАХ МЕДИЦИНЫ

Шундрик В. -1к.
Руководитель: Субачева Н.А

История развития медицины, гуманнейшей из наук, - это летопись героической борьбы за жизнь и здоровье, неиссякаемого самопожертвования в поисках истины, столкновений с невежеством, суевериями и предрассудками, упорства и героизма перед лицом неудач и разочарований. На протяжении своего развития медицина имела много символических

изображений, прежде всего потому, что она ближе всего ассоциировалась с радостью, благом или горем людей. Одни из этих символов ушли в далекое прошлое и забыты навсегда, другие существуют и поныне. Изучение возникновения и внутреннего содержания символа - весьма сложное, но увлекательное занятие. Любой символ, имея свою собственную историю, в разное время приобретает различные смысловые оттенки. Общеисторическое значение символов и эмблем велико и потому, что они показывают тесную связь медицины с общей историей и культурой народов. Народ без прошлого не имеет будущего. Чем лучше мы представляем себе содержание той культурной эстафеты, которую приняли от прошлых поколений, тем ценнее, значимее становится для нас наша собственная жизнь, тем полнее мы понимаем свою ответственность за то, что передадим будущим поколениям. Без этого наша жизнь не имела бы ни цели, ни смысла.

КОСМЕТИЧЕСКИЕ СРЕДСТВА В ДРЕВНЕЙ ГРЕЦИИ И ДРЕВНЕМ РИМЕ

Макаренко М. — 1 к.
Руководитель: Субачева Н.А.

Всем известно, что в Древней Греции царил культ тела, чистоты, гигиены и здоровья. После длительных и тщательных омовений лица и тела в кожу втирали кремы, масла, ароматические средства. В Греции изготавливались ароматические масла, жиры и многие другие косметические средства. Гречанки для предотвращения морщин делали настой из цветочной росы и виноградного сока. Они красили губы, румянили щеки, осветляли волосы. Тушь для ресниц греческие девушки делали из сажи, помаду из кошенили (травяная тля) или же с добавлением пигментов сурик, киноварь, которые, к слову, ядовиты. Гречанки широко использовали в косметических целях молочные продукты. О косметических недостатках и кожных болезнях, о косметических средствах много писал Гиппократ. В его трудах можно найти советы и рецепты притираний - для женщин с увядшей кожей, средства для устранения запаха из носа, рта, средства для чистки зубов, для смягчения кожи и устранения пигментных пятен, для ароматизации тела и платья и огромное количество других косметических рецептов.

Мыло производилось в промышленных масштабах из золы и животного жира. Наилучшим сырьем считались жир козы и зола бука. Вводить в состав мыла ароматические добавки стали значительно позже, поэтому не только женщины, но и мужчины пользовались духами, разными ароматическими мазями и притираниями, основной целью которых было заглушить неприятный запах, оставшийся после мытья.

В Древнем Риме, в отличие от Греции, косметику использовали не только женщины, но и мужчины — подводили губы и румянили щеки. В Древнем Риме в качестве краски для век использовался уголь, фукус (морская водоросль), в основном, красного цвета — для щёк и губ, воск — в качестве средства для удаления волос, ячменная мука и масло — для удаления прыщей, а пемза — для отбеливания зубов.

Богатые римлянки, кроме пудры, румян, крема, использовали молоко, сливки, кисломолочные продукты. У древних римлянок были модными белокурые волосы. Они знали секрет окраски черт волос в белые, который удалось найти спустя много веков.

ЭТИМОЛОГИЯ НЕКОТОРЫХ АНАТОМИЧЕСКИХ ТЕРМИНОВ

Боговин М. С. — 1 к.
Руководитель: Субачева Н. А.

Этимоло́гия -раздел лингвистики (сравнительно-исторического языкознания), изучающий происхождение слов (устойчивых оборотов и реже морфем). А также - методика исследований, используемых при выявлении истории происхождения слова (или морфемы) и сам результат такого выявления. Также под этимологией может пониматься любая гипотеза о происхождении того или иного конкретного слова или морфемы.

Несмотря на то, что латинский язык называют «мёртвым» в том смысле, что он давно перестал быть разговорным, то есть средством общения, его фонетика, графика, элементы грамматики, лексика и словообразовательные средства наряду с лексикой и словообразовательными средствами древнегреческого языка продолжают жить в профессиональном языке медицинских работников.

В целом термины которые были образованы в анатомии имеют разное лексическое происхождение. Некоторые термины были созданы на основе умозрительных заключений, одни выражали только визуальное сходство и чем-то (Как слово musculus), другие своим наименованием показывают суть данного явления или структуры(примером данного слова является anatomia), третие показывают отношение людей к описываемому этим словом явлениям или структурам (примером служит слово sacrum). Другим направлением являются слова строящиеся из нескольких слов, так как латинский язык является достаточно удобным для такого рода манипуляций со словами.

РОМАНСКИЕ ЯЗЫКИ, ИХ ВОЗНИКНОВЕНИЕ И РАСПРОСТРАНЕНИЕ

Гретченко Э. −1 к.
Руководитель: Субачева Н.А.

Романские языки −группа языков и диалектов, входящих в итальянскую ветвь индоевропейской языковой семьи и генетически восходящих к общему предку −латыни. Название “р о м а н с к и й” происходит от латинского слова Romanus.

*Термин “Р о м а н и я” (*Roma *−Рим) в н. э. обозначал территории, входящие в состав Римского государства. С лингвистической точки зрения понятие “Р о м а н и я” соответствовало зоне распространения латинского языка.*

“С т а р а я Романия” −те государства Европы, где сейчас говорят на романских языках, а некогда говорили на латинском языке: Италия, Португалия, почти вся Испания, Франция, юг Бельгии, запад и юг Швейцарии, основная территория Румынии, почти вся Молдавия, отдельные вкрапления на севере Греции, юге и северо-западе Сербии. “Н о в а я Романия” −это области распространения романских языков за пределами Европы: часть Северной Америки, почти вся центральная и южная Америка, большая часть Антильских островов. Становление литературных форм

романских языков во многом опиралось на традиции классической латыни, что позволило им вновь сблизиться в лексическом и семантическом плане уже в новое время.

МИФЫ ДРЕВНЕЙ ГРЕЦИИ РИМА

Соловьёва Т.— 1 к.

Руководитель: Субачева Н.А.

Древнегреческое общество прошло долгий путь развития от самого темного, архаического периода до развитой цивилизации. Вместе с развитием общества изменялись и мифы, в которых выражалось его мировоззрение.

Мифы Древней Греции — это мифы о пантеоне богов, о жизни титанов и гигантов, о подвигах других мифических (а зачастую и исторических) героев.

Для современного человека древние сказочные легенды стали обыденными историями, многие люди в поисках какой-либо истины ссылаются на их содержание и мораль. Среднестатистический обыватель свободно использует в разговорном обиходе «крылатые» выражения мифов древней Греции, порою даже не вникая в их смысл. Вот и проблема: блеснув чьей-либо мыслью или удачным оборотом, люди обычно или смущенно оговариваются: «Не помню, откуда это взял...» Это даёт нам повод узнать мифологию получше.

ДРЕВНЕГРЕЧЕСКИЕ И ДРЕВНЕРИМСКИЕ КОММУНИКАЦИИ

Терещенко О. — 1 к.

Руководитель: Субачева Н.А

Согласно историческим свидетельствам развитие водоснабжения и водоотведения (канализации) началось ещё в древности. Причём следует отметить довольно высокий уровень инженерных технологий, применяемых древними цивилизациями. Наши предки умели строить различные каналы, обширные системы водоснабжения и канализации. Развитие водоснабжения и водоотведения позволило повысить уровень жизни людей.

В императорскую эпоху в Риме уже имелось несколько водопроводов, по которым вода самотеком поступала в город. На пересечении оврагов или долин каналы проводили по акведукам (специальным мостам). Частично акведуки сохранились до наших дней.

Первые канализационные системы сложились еще в глубокой древности.

В VII-VI веке до н.э. в Древнем Риме был построен знаменитый водосток —cloaka maxima (шириной около 5 метров), который в долгие века оставался самой совершенной канализационной системой в мире. Воду закачивали и сливали при помощи помп, или при помощи свинцовых труб, разного диаметра. Стоки направлялись в водоемы. Таким образом, в Древнем Риме уже использовались и примитивные канализационные насосные станции, и почвенная очистка воды.

На их примере можно увидеть развитие водоснабжения, водоотведения и изучить особенности инженерного искусства того времени.

СПОРТ В ДРЕНЕЙ ГРЕЦИИ И РИМЕ

Подсосова А.- 1 к.
Руководитель: Субачева Н.А.

Наибольший след в истории античности оставили Олимпийские игры, проводившиеся в долине Алфея на берегу Кладея.

По одной из легенд, игры были основаны Гераклом, когда он победил царя Элиды Авгия. Радуясь победе, Геракл устроил состязания в беге между своими четырьмя братьями и, поздравляя победителя, увенчал его оливковой ветвью. Геракл сам выбрал дорожку для бега и определил ее длину в 600 ступней (192, 27 м - один стадий).

Прибывали участники игр по-разному: кто пешком, кто морем, кто на повозках. Спали под открытым небом. На Олимпийских играх присутствовали только мужчины. Женщинам под страхом смерти запрещалось появляться на празднике.

Любимым зрелищем был пентатлон, включавший в себя бег, прыжки в длину, метание диска и копья, борьбу.

ЛАТИНСКИЙ ЯЗЫК КАК НЕИЗМЕННЫЙ ЯЗЫК МЕДИЦИНЫ

Бабарыкина В. Лепова Е - 1 к.
Руководитель: Шпильчук Л. И.

Для полноценного овладения любой профессией человек должен обязательно знать терминологию своей специальности. Современный врач, даже когда говорит по- русски на профессиональную тему, употребляет белее 60 процентов слов латинского и греческого происхождения. Терминология современной медицины представляет собой одну из самых сложных терминологических систем. Общее количество медицинских терминов неизвестно. По оценкам специалистов, терминологический фонд современной медицины превышает 500 000 медицинских терминов. Медицинская терминология различается по 3 направлениям: анатомическая, клиническая и фармацевтическая. Латинский язык в наше время используется как международный научный язык в ряде медико -биологических дисциплин и номенклатур.

КАНОНЫ КРАСОТЫ В ДРЕВНЕЙ ГРЕЦИИ И РИМЕ

Завгородняя С . 1к.
Руководитель: Субачева Н. А.

Римляне поклонники красоты.
В секретах красоты преуспели как мужчины, так и женщины.
Каноны красоты Древнего Рима существенно отличались от греческих (хотя Греция служила для Рима неиссякаемым источником вдохновения).
Истинной (в смысле божественной) красотой считалось белокожая златокудрая женщина.
Что касается поэтов, искусственная красота была у них в почете.
Всегда представление о красоте связано с понятием здоровья. Гейне говорил, что единственная красота, которую он знает, - это здоровье. Поэтому и богиня любви и красоты украшала своим присутствием храм Асклепия.

ШКОЛЯРЫ. ВАГАНТЫ

Лылова Е.А.-1 к.
Руководитель: Ткачева Н.А.

Жизнь университета была богата пышными церемониями, торжественными диспутами между учеными мужами, красочными процессиями по праздничным дням. Шумные пирушки буйных ватаг школяров тоже были характерной чертой средневековых университетов. Среди студентов, особенно на старших факультетах, хватало солидных самостоятельных людей. Но большинство «артистов» — это молодежь, к тому же далеко не всегда хорошо обеспеченная. Многие из них, как могли, подрабатывали, но чаще всего выпрашивали милостыню, а то и грабили по ночам мирных обывателей. Случались кровавые стычки между студентами и горожанами.

Многие школяры переходили из города в город, чтобы слушать лекции разных знаменитостей. Жажда знаний гнала их из Сала-манки в Париж, из Парижа в Неаполь, из Неаполя в Оксфорд. Таких студентов-странников называли ваганты (по-латыни — «бродящие»). Кто-то из вагантов добивался в конце концов высших ученых званий, но сколько было среди них неудачников, так никогда и не ставших даже бакалаврами.

Студенты-бедняки снимали для жилья каморки, перебивались случайными заработками, уроками, нищенствовали, странствовали. К XIV в. сложилась особая категория странствующих студентов (ваганты, голиарды), которые неоднократно перебирались из одного университета в другой. Многие ваганты не отличались нравственностью и были подлинным бичом для обывателей. Но из них выросло немало подвижников науки и образования. Первые университеты были весьма мобильны. Если в окрестностях начинались чума, война и прочие беды, университет мог сняться с насиженного места и перебраться в другую страну или город.

Многие из полузнаек-вагантов оказались прекрасными поэтами. Среди этих произведений есть и лирика, и злая сатира, и даже не вполне приличные вирши. Но в остроумии и одаренности их авторам, часто безымянным, отказать нельзя.

Так, университеты имели ряд привилегий, дарованных им римским папой: выдача разрешений на преподавание, присуждение ученых степеней (ранее это было исключительным правом церкви), освобождение студентов от военной службы, а само учебное заведение от налогов и т. п. Ежегодно в университете избирались ректор и деканы.

ОСНОВАНИЕ РИМА, ГРЕЧЕСКИЙ МИФ. «ЭНЕИДА» ВЕРГИЛИЯ — РИМСКИЙ НАЦИОНАЛЬНЫЙ ЭПОС

Желточенко В.- 1 курс
Руководитель: Ткачева Н.А.

Верлигию дали время для работы — 12 лет, но он так и не завершил её. Завещал своему другу сжечь поэму. Об Августе ни слова — но тот не стал её уничтожать. Одобрил политические тенденции, что римляне — избранный народ, которому предназначено править миром.

Героическая поэма «Энеида» доставила Вергилию мировую славу. Поэма посвящена троянскому герою Энею, бежавшему после разрушения Трои и основавшему новое царство в Италии. Это царство дало начало Риму, возводившему генеалогию своих вождей к легендарному герою Трои.

В образе Энея, созданном Вергилием, находят обобщенное выражение те моральные качества, которые были присущи героям древности и должны вновь возродиться у современных правителей Рима. Поэт рисует своего героя "идеальным римлянином", почитающим богов, уважающим старших, ставящим интересы государства превыше всего, мужественным и снисходительным к слабостям других.

Вергилий создает эпос новый. Здесь царят новые идеи, иная философия, другое отношение к действительности, новый подход к эпическому творчеству, когда автор даже не пытается раствориться в повествовании и не только не скрывает своих пристрастий как это делал Гомер, но открыто тенденциозен. Вергилий уже с детства изучал гомеровские гекзаметры, киклических и эллинистических поэтов, философов и ораторов. Гомер и Вергилий заставляли своих героев жить высокими страстями, быт отступал на задний план.

Вергилий создал монументальное эпическое произведение, в котором судьбы римского государства переплетены с судьбами многочисленных героев древнего и современного Рима. Поэма является характерным образцом "римского классицизма". Ему свойственна ориентация на греческие монументальные произведения, стремление к большой лаконичности и обобщенности образов, к выразительности и экономии художественных средств, к гармоничности и строгой обдуманности композиции.

ПИСЬМЕННОСТЬ И НАУКА В ДРЕВНЕЙ ГРЕЦИИ

Онищенко О. - 1 к.
Руководитель: Ткачева Н.А.

Древнейшая греческая письменность, забытая в конце II тысячелетия до н. э., никогда уже не была восстановлена.

В конце гомеровского времени греки познакомились с письменностью небольшого народа - финикийцев, живших на восточном побережье Средиземного моря. Финикийцы писали знаками, каждый из которых обозначал отдельный звук. Но у них были только согласные буквы. Греки добавили гласные буквы и выработали свой алфавит.

Древние греки любили книги, их много раз переписывали и бережно хранили. Благодаря этому часть греческих книг дошла до нашего времени, хотя множество их погибло при пожарах и других несчастных случаях.

К наиболее любимым в Греции книгам принадлежали сочинения по истории. Греки гордились историей своей родины. С особенной гордостью они вспоминали победы, одержанные над могущественной Персией.

В V веке до н. э. грек Геродот написал «Историю греко-персидских войн». В своё сочинение он включил много сведений о народах, участвовавших в этих войнах. Древние греки так высоко ценили исторические труды Геродота, что назвали его «отцом истории».

3. Учение Демокрита.

Большой вклад в развитие естествознания сделал афинский учёный V века до н. э.- Демокрит. Он высказал смелую мысль, что весь мир состоит из мельчайших частиц - атомов. Демокрит пришёл к выводу, что никакой души у человека нет. Он доказывал, что вера в богов возникла из беспомощности и страха древних людей перед грозными явлениями природы.

Дальнейших успехов в развитии науки греки достигли в IV веке до н. э. Учёные Греции создали труды по медицине, зоологии, ботанике, астрономии, математике. В IV веке до н. э. жил величайший учёный древней Греции - Аристотель. Он не только изучил все науки, существовавшие в древности, но и продвинул их вперёд. Аристотель был и выдающимся педагогом. Он основал в Афинах лучший в Греции гимнасий - высшую школу, в которой сам преподавал.

В V-IV веках до н.э. греческая культура достигла блестящего расцвета. Она оказала очень большое влияние на культуру других стран.
Греческая азбука послужила основой для многих современных азбук, в том числе и для русской.

ЛАТИНСКИЙ ЯЗЫК В ЖАРГОНЕ СТУДЕНТОВ

Сикорский М.-1 к.
Руководитель: Ткачева Н.А.

Латинский язык, возникший очень давно на территории Апеннинского полуострова, довольно долго просуществовавший и внесший огромный вклад в культуру и развитие человечества, на сегодняшний день считается мертвым. Несмотря на то, что этот язык и по сей момент используется в терминологии, его носителей не осталось на нашей планете. Но влияние этого «мертвеца» оказалось довольно сильным, чтобы исчезнуть из разговорной речи навсегда. Таким образом, в 21 веке мы до сих пор слышим отголоски предка романских языков не только в стенах научных и довольно серьёзных учреждений, но и за их стенами, например в студенческой столовой или где-нибудь на улице. Само собой разумеющееся, что латынь в неформальной обстановке будет применяться не только для обозначения частей тела человека, лекарств и прочего, но и для вполне обычных жизненных ситуаций, привычных, а иногда и весёлых вещей. Таким образом латынь незаметно, словно хитрый шпион, начинает прокрадываться в нашу речь и в наш жаргон. Из латыни в наш жаргон пришло немало целостных слов: бестия(лат. bestia-зверь), финисок(лат. finis-конец) в русском языке сохраняет значение, юс(лат. jus-право) в жаргоне-юрист. Некоторые заимствования имеют ироничный характер, например слово проскриптор, произошедшее от созвучного proscriptor, в латыни означает человека, осужденного на ссылку или «смерть», но в русском жаргоне имеет значение “двоечник”, слово ерунда, пришедшее от слова gerundium(герундий) играет роль синонима просторечия чепуха. Таким образом можно сделать вывод, что, несмотря на свою смерть, латинский язык продолжает доноситься из уст непохожих друг на друга людей. Латынь на данный момент времени это не пресный и томный научный язык, а

достаточно распространённая словесная единица, которая обогащает наш язык, делает его интереснее и живее.

ТЕРМИНЫ-МЕТАФОРЫ В МЕДИЦИНСКОЙ ТЕРМИНОЛОГИИ

Карева А. — студентка 1 к.
Руководитель: Ткачева Н.А.

В семантическом пространстве медицинской терминологии существует особая метафорическая картина мира. В метафорической составляющей медицинской терминологии отражен комплекс представлений о человеке как о физическом и психическом существе, которое, прежде всего, нуждается в помощи и лечении. Поэтому в качестве особенностей метафорической картины мира медицинской терминологии следует рассматривать концентрацию внимания на патологиях, передачу средствами терминологии всевозможных отклонений, нарушений, изменений отрицательного характера и почти полное отсутствие показателей положительных изменений, нейтральных состояний.

В качестве источников пополнения метафорической системы медицинской терминологии выступают те же основные группы лексики, что и в общенациональном русском языке. Таким образом, метафорическая картина мира медицинской терминологии рассматривается как традиционная.

В медицинской терминологии реализуются основные метафорические модели общенационального русского языка, в процессе исследования не было обнаружено принципиально новых моделей. Таким образом, наблюдается преемственность терминологии от языка: несмотря на специфические черты медицинской картины мира, отраженные в ней фрагменты (семантические сферы) основаны на базовых метафорических моделях русского языка.

Динамичность метафорической картины мира медицинской терминологии проявляется в метафоризации вновь появляющихся артефактов и развивающихся социальных отношений, во включении в метафорическое поле результатов развития науки (как медицинской, так и других отраслей знания).

Специфические черты медицинских терминов-метафор, метафорической картины мира медицины обусловлены главным образом экстралингвистическими факторами: объектом изучения, методами лечения, возможностью непосредственного чувственного восприятия объекта, историей формирования отрасли медицинского знания. Так, в анатомической терминологии активно используются параллели с явлениями растительного и животного мира, преобладает конкретная лексика (бронхиальное дерево, конский хвост, глазное яблоко, крыло носа, корешок нерва).

АССОЦИАТИВНЫЕ ТЕРМИНЫ МЕДИЦИНСКОЙ ТЕРМИНОЛОГИИ

Семерова К. - 1 к.
Руководитель:Ткачева Н.А.

Одним из самых эффективных методов запоминания латинских терминов является метод ассоциаций. Он гораздо веселее и интереснее, чем обычное заучивание, а умение правильно использовать этот метод полезно для работы с латинской терминологией и позволит избежать механического заучивания, что весьма актуально для современных студентов.

Ассоциации по смыслу.

Clavicula — ключица, (от лат clavis «ключ, задвижка, засов»). Оно ассоциируется с движением кости вокруг своей оси в момент поднятия плеча, которое напоминает движение ключа в замочной скважине; auris - ухо. Оно ассоциируется с наружной поверхностью чего-либо или ауры; nomen - имя. Из английского языка можно взять самое простое выражение: ―My name is Sasha.

Ассоциации с латинскими прилагательными.

Coronoideus - венечный. Прилагательное можно разделить на две основы: ―corono- ―корона, а второе ―ideus (идеи). Сопоставив две основы, получим выражение: Королевские идеи; liber- свободный. Одна из самых знаменитых скульптур в США и в мире, The Statue of Liberty (Статуя Свободы); major — большой. В музыкальной терминологии - слово мажор- радостная мелодия; latus — широкий. В древние времена латами называли доспехи (боевые снаряжения), которые состояли из крупных металлических пластин, откованных по форме тела воина.

Имена и фамилии.

Albus (белый) - Альбус Дамблдор; bulbus (луковица) - Тарас Бульба.

Ассоциации сочетаний существительных с прилагательными.

Os lacrimale - слезная кость. Ассоциируется с знаменитым музыкальным произведением В. А. Моцарта―Lacrimoza (Слезы); musculus flexor- мышца — сгибатель. Ассоциация из жизни: накладывание рисунка на целлофановые пакеты под действием валов на которые наклеены резиновые пластинки - флексы.

Таким образом, ассоциативный метод является наиболее удобным и эффективным механизмом запоминания латинской терминологии, так как не требует от студента специальных знаний; благодаря ему можно избежать механического заучивания и сократить количество времени, требуемого для изучения латинской медицинской терминологии; он позволяет развивать образное и творческое мышление; кроме того, широко применяется среди студентов.

ИСТОРИЯ СТАНОВЛЕНИЯ КЛИНИЧЕСКИХ ТЕРМИНОВ

Здоровец И.— 1к.
Руководитель:Ткачева Н.А.

Клиническая терминология - довольно подвижная часть терминологической системы медицинской науки. Условия этой подвижности, продуктивности

терминоэлементов создает постоянное развитие науки, возникновение новых понятий, новых методов исследования, диагностической аппаратуры, новых направлений в науке.

Клиническая терминология начала формироваться еще в эпоху Гиппократа. Многие клинические термины связаны с его именем. Такие термины как succussio Hippocratis - Гиппократов шум плеска, facies Hippocratica - Гиппократова маска, функционируют в клиничекой терминологии до нашего времени. Значительная часть клинических терминов - это сложные и производные слова, построенные на базе анатомо-гистологических наименований и терминоэлементов преимущественно греческого происхождения.

Основную роль в усвоении клинической терминологии играют греко-латинские терминообразующие элементы - терминоэлементы. Овладение системой греко-латинских терминоэлементов - это, своего рода, терминологический ключ к пониманию базовой медицинской клинической терминологии.

Основная масса клинических терминов - производные и сложные слова.

1. Производные - клинические термины, образованные от других слов при помощи приставок и суффиксов (аффиксация):

а) при помощи приставок и корня: hypo pharynx - часть глотки от верхушки до перехода в пищевод;

б) при помощи корня и суффикса: nephritis - воспаление почки;

в) при помощи приставки, корня и суффикса: para nephritis воспаление околопочечной клетчатки;

2. Сложные слова образуются путем сложения нескольких корней с помощью соединительного «о» (если терминоэлемент начинается с согласной) или без него
Например: otorrhagia - кровотечение из уха; glossalgia- боль в языке;

3. Комбинированные термины образованы с использованием приставок, суффиксов и способом словосложение одновременно
Например: thyreotoxicosis - болезненное состояние, развивающееся при повышений деятельности щитовидной железы, выбрасывающей в кровь токсины.

Латинско-греческая клиническая терминология была нередко весьма конструктивна, и структурные особенности клинического термина дают студенту-медику ценную и подробную характеристику болезни. Поэтому зная анатомический или физиологический термин, а также значение корня, основу сложных слов, приставки и окончания, студент-медик легче поймет диагностический смысл многих клинических терминов.

ЭПОНИМЫ В МЕДИЦИНСКОЙ ТЕРМИНОЛОГИИ

Панчева А.-1 к.
Руководитель: Ткачева Н.А.

В связи с развитием когнитивного направления в языкознании пристальное внимание уделяется эпонимическим терминам. Трудно представить область медицины, в которой в той или иной степени не использовались бы эпонимические названия. Большинство классических эпонимов, вошедших в употребление в XVI-XIX веках,

активно используются и в настоящее время, несмотря на предложения ограничить их употребление.

Появляются и новые термины, которые отражают этапы развития медицины, приоритет того или иного учёного или страны в открытии новых фактов, но не отражают отдельных признаков объектов номинации. В настоящее время научные и терминологические дискуссии по поводу употребления эпонимических терминов активно продолжаются, и это обусловило актуальность рассматриваемой темы.

Большая часть мифологизмов вошла в медицинскую терминологию в эпоху Возрождения — период культа античности и классической латыни. В составе анатомических терминов часто используются имена богов и богинь: cornu Ammonis (hippocampus) — Аммонов рог, mons Veneris — мост Венеры, umbilicus Veneris — пуп Венеры, tendo Achillis (t. calcaneus) — Ахиллово сухожилие и др. При подготовке международной анатомической номенклатуры в 1955 году было решено полностью исключить эпонимы, заменив их систематическими терминами (например, первый шейный позвонок имеет эпонимическое название Atlas (Атлант) и систематическое vertebra cervicalis prima (I)), но в производных терминах эпоним сохраняется (атлантозатылочный — atlanto-occipitalis, ахиллотомия — achillotomia, ахиллотенопластика — achillotenoplastica и т.д).

Были рассмотрены эпонимические термины, представленные разнообразными группами в определенных подсистемах медицинской терминологии: анатомо-гистологической, фармацевтической и клинической. В результате исследования эпонимы были объединены в следующие группы: мифологизмы; библеизмы; термины, включающие имена литературных персонажей; термины, включающие имена ученых и врачей; термины, включающие имена больных.

МЕДИЦИНСКАЯ ЛАТЫНЬ: ПРОБЛЕМЫ АНАТОМИЧЕСКОЙ НОМЕНКЛАТУРЫ

Белоус С. -1 к.
Руководитель: Ткачева Н.А.

Номенклатура — это производное от латинского слова, означающего «список». По сути, это свод терминов, названий и основных понятий, которые употребляются в какой-либо отрасли знания. Для того чтобы правильно его составить, необходимо воспользоваться системой классификации. Анатомическая номенклатура представляет собой систему терминов на латинском языке, которые обозначают части тела, органы или их фрагменты. Выделяют национальную номенклатуру, которая, как правило, составляется на национальном языке, в нашем случае — русском, и международную, оформленную латиницей. Анатомическая номенклатура появилась как следствие накопления знаний человека о собственном организме. В какой-то момент возникла потребность систематизировать все имеющиеся на тот момент сведения. И хотя номенклатура составлялась на латинском языке, в ней много терминов, которые имеют греческие и арабские корни. Это связано с развитием медицины на Востоке.

В августе 1997 года была утверждена окончательная на сегодняшний день анатомическая номенклатура. Оси и плоскости, которые описывают положение органов, решили использовать такие же, как и в прямоугольной системе координат. Выделяют три оси тела: вертикальную; сагиттальную; горизонтальную. Они расположены перпендикулярно друг другу. Вертикальная ось проходит через тело человека и разделяет его на переднюю и заднюю части. Сагиттальная имеет передне заднее направление и делит туловище на правую и левую стороны. Горизонтальная располагается параллельно плоскости опоры. Сагиттальных и поперечных осей можно провести несколько, а вертикальную — только одну.

ТИПЫ ЗАИМСТВОВАНИЯ ИЗ ДРЕВНЕГРЕЧЕСКОГО И ЛАТИНСКОГО ЯЗЫКОВ В МЕДИЦИНСКУЮ ТЕРМИНОЛОГИЮ

Алатарцева С. — 1 к.
Руководитель: Ткачева Н. А.

Заимствование-это универсальное языковое явление, заключающееся в акцепции одним языком лингвистического материала из другого языка вследствие экстралингвистических контактов между ними, различающихся по уровню и формам. Следует подчеркнуть, что изучение этого процесса как результата контактов между народами и их языками имеет важное значение для решения ряда лингвистических проблем. Греческий и латинский - территориально и исторически взаимодействующие индоевропейские языки, поэтому недостающие обозначения заимствовались латинским языком из греческого и легко в нем ассимилировались. Мотивация большинства медицинских терминов зависит от знания латинских и греческих словообразовательных элементов, переведенных или заимствованных из иноязычных источников. Заимствования укоренялись довольно быстро, чему немало способствовало то обстоятельство, что большинство практикующих в Риме врачей были греками.

Греко-латинская терминология включает в себя все основные понятия и термины медицины, без знания которых невозможно осмысленное усвоение специальных предметов. Немаловажным является тот факт, что античное терминологическое наследие стало основой международного терминологического фонда, а греко-латинские словообразовательные элементы получили статус международных терминоэлементов. Терминоэлементам греко-латинского происхождения, т. е. структурным элементам терминов, которые имеют специальное значение в терминологической системе и служат для образования искусственных терминов, принадлежит особая роль в медицинской терминологии.

Необходимо отметить, что не только анатомическая терминология построена на основе греко-латинских моделей, но и названия лекарственных средств, например слово токсин, обозначающее яд биологического происхождения, происходит от древне-греческого toxikos — «ядовитый».

В наше время научные термины нередко создаются из греческих и латинских корней, обозначая понятия, неизвестные в эпоху античности, что объясняется исключительной

продуктивностью латинских и греческих корней, входящих в различные научные термины, а также их интернациональным характером, что облегчает понимание таких основ в разных языках.

САЛЕРНСКИЙ КОДЕКС ЗДОРОВЬЯ

Куксова А. - 1 к.
Руководитель: Ткачева Н.А

Составленный «Салернский кодекс здоровья» - это трактат о практической терапии, диететике и гигиене. Стихи салернского врача Арнольда из Виллановы, сохраняют свою актуальность и значимость в настоящее время.

Произведение содержит множество медицинских рекомендаций по борьбе с отравлениями, изложенных в стихотворной форме. Слова «яд» и «противоядие» довольно часто употребляются в «Кодексе». В нем рассматриваются свойства различных пищевых продуктов, плодов, растений и их лечебное действие. Труд написан по обычаю того времени в стихах: советы, данные в стихотворной форме, лучше запоминаются. Многие из них не утратили своего значения и в наше время.

В первых главах даются диэтетико-гигиенические навыки, подробно рассматриваются свойства различных пищевых продуктов, плодов, растений и их лечебное действие. Вот некоторые из этих советов:
«Быть ты желаешь здоровым, лицо мой чаще и руки:
После еды омовенье несет наслажденье двойное:
Делает чистыми руки, а зрение делает острым»

В «Солернском кодексе здоровья» Арнольд уделил внимание процессу старения, так на основе гуморальной теории объясняет, как в старости наступает плохое пищеварение, потеря аппетита, истощение, дряблость и морщинистость кожи, ослабление зрения, слуха, памяти.

Так же трактат показал, что современные принципы диетологии и здорового образа жизни были известны давно. Еще в XIV веке было известно, что во всем надо соблюдать умеренность, пища должна быть легкой, питательной: нежирное мясо, рыба, сладкие вина. Считалось, что секрет долголетия заключается в рациональном режиме: умеренная еда, отказ от злоупотребления вином, разумное пользование воздухом, сном и бодрствованием, движением и покоем и, наконец, воздержание от излишних страстей - вот главнейшие правила такого режима. Соблюдая его, человек может прожить столько лет, сколько предназначено ему природой, то есть гораздо больше, чем он живет на самом деле.

CARACTÉRISTIQUES CLINIQUES ET ANATOMIQUES DE LA CONQUE NASALE MOYENNE, AFFECTANT L'ÉVOLUTION DE LA SINUSITE CHRONIQUE

Adushkin M., Adushkina V., Umarova N ., Klochkova V., Lebets K et - ts de la 5 - ème année
Les chefs scientifiques - Blotsky A.A ., Chpiltchouk L.I

Le rôle principal dans la pathogenèse de la sinusite paranasale chronique est joué par la structure anatomique de la paroi latérale de la cavité nasale, en particulier son complexe ostéoméatique. La conque nasale moyenne, l'entonnoir en treillis, la poche nasale, le processus en forme de crochet font partie du concept morphofonctionnel du complexe ostéoméatal. Ce complexe forme des anastomoses excréteurs des sinus paranasaux du groupe antérieur(cellules antérieures de l'OS ethmoïd, du sinus maxillaire et du front). En ce qui concerne le groupe postérieur des sinus paranasaux, tels que le groupe postérieur des cellules du labyrinthe en treillis et des sinus principaux, ce rôle est joué par la poche sphénoéthmoïdale.

Contrairement à la rhinosinusite chronique aiguë, en plus de l'infection des sinus paranasaux par la microflore pathogène, un facteur pathogénétique important est l'obstruction de la anastomoses naturelle, ce qui conduit au contact des zones opposées des structures de la cavité nasale et des sinus. En conséquence-une violation du drainage et de la ventilation de ce dernier, un changement dans la viscosité de la sécrétion et une violation du transport mucociliaire, le développement de la sinusite.

Une composante anatomique importante de la paroi latérale de la cavité nasale, comme la conque nasale moyenne, participe à la formation du complexe ostéoméatique, se caractérise par un certain nombre de caractéristiques cliniques et anatomiques. Il est divisé par la plaque principale en cellules antérieures et postérieures de l'OS ethmoïd. La plaque est attachée à la plaque médiale de l'orbite (plaque de papier). La fixation à l'avant de la conque nasale moyenne à la base du crâne peut provoquer des liquorrhées nasales lorsqu'elles sont endommagées. La variabilité anatomique de la structure des structures intra-nasales détermine l'existence de plusieurs variantes anatomiques de base de la conque nasale moyenne, associées à une violation du complexe ostéoméatique. Il s'agit d'une conque nasale moyenne paradoxale et pneumatique (concha bullosa).

La conque nasale moyenne paradoxale a un bord incurvé avec une surface concave face à la cloison nasale. Cette variante anatomique elle-même peut conduire à une violation significative du fonctionnement normal du complexe ostéoméatique. La variante anatomique bilatérale est plus fréquente.

En présence d'une conque nasale moyenne bulleuse, la résection de sa portion latérale est généralement effectuée.

Avec ces options anatomiques peuvent être associés à une violation du fonctionnement du complexe ostéoméatalnogo, sténose des anastomoses des sinus paranasaux formés et naturels dans la rhinosinusite chronique. En fait, la conque nasale moyenne est un repéra anatomique important dans l'exécution d'interventions chirurgicales sur la cavité nasale et les sinus paranasaux.

ÉVOLUTION DE LA PRÉVENTION DE LA GRIPPE

Adushkin M., Adushkina V., Umarova N ., Klochkova V., Lebets K et - ts de la 5 - ème année Les chefs scientifiques - Marunich N. A ., Mateischen R. S ., Chpiltchouk L.I

En juillet 2018, la société des ONG Petrovax pharm a reçu le certificat d'enregistrement n ° LP-004951 de 23.07.2018 sur quadrivalent inactivé subunique adjuvant un vaccin pour la

prévention de la grippe — "Grippol Quadrivalent". Il est le plus moderne des vaccins antigrippaux existants dans le monde, créé en utilisant la technologie antigène d'épargne, avec une grande efficacité préventive et la sécurité.

"Grippol Quadrivalent" - le premier vaccin antigrippal quadrivalent en Russie, qui protège immédiatement contre strain de grippe 4:2 virus de la grippe de type a (H1N1 (porc) et H3N2 (Hong Kong)) et les virus de la grippe dans les lignes 2 (B / Yamagata + B / Victoria).

Le vaccin provoque la formation d'un niveau élevé d'immunité spécifique contre la grippe. L'effet protecteur après la vaccination, en règle générale, se produit après 8-12 jours et persiste jusqu'à 12 mois.

Un avantage clé du vaccin quadrivalent russe est la haute efficacité avec une faible réactivité. Une diminution de la charge antigénique ' sur le corps de l'homme est atteint grâce à l'utilisation soluble d'eau biodégradant adjuvant — Polyoxydonium, qui améliore la réponse immunitaire à la vaccination, et permet à un triplé de réduire антигенную de charge par rapport à la technologie conventionnelle: 20 μg au lieu de 60 μg d'hémagglutinine.

Seuls six pays dans le monde produisent des vaccins quadrivalents: l'Australie, les États-Unis, le Canada, la nouvelle-Zélande, l'Allemagne et la France. La Russie est le septième pays au monde à avoir sa propre production indépendante de ces vaccins.

Contre-indications

 réactions allergiques aux protéines de poulet et aux composants du vaccin
 réactions allergiques aux vaccins antigrippaux précédemment administrés;
 réaction sévère (température supérieure à 40 ° C, œdème et hyperémie au site d'administration supérieur à 8 cm de diamètre) ou complications de l'administration précédente de vaccins contre la grippe dans l'histoire;
 état fébrile aigu ou exacerbation d'une maladie chronique (la vaccination est effectuée après la récupération ou pendant la période de rémission);
 Arvi léger, maladies intestinales aiguës (la vaccination est effectuée après la normalisation de la température);
 période de grossesse (avec un vaccin contenant un conservateur thiomersal);
 âge jusqu'à 18 ans.
 ne pas entrer intraveineux.

Utilisation pendant la grossesse et l'allaitement

La décision de vacciner les femmes enceintes doit être prise par un médecin individuellement en tenant compte du risque d'infection par la grippe et des complications possibles de l'infection grippale. La vaccination la plus sûre dans les trimestres II et III.

L'allaitement n'est pas une contre-indication à la vaccination.

ОГЛАВЛЕНИЕ

SECTION OF THE ENGLISH LANGUAGE — *5*

SECTION du FRANCAIS et du LATIN — *186*