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БАШКИРСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ
МИНИСТЕРСТВА ЗДРАВООХРАНЕНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ

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III ВНУТРИВУЗОВСКОЙ НАУЧНО-ПРАКТИЧЕСКОЙ КОНФЕРЕНЦИИ
«ЯЗЫКИ И МЕДИЦИНА»

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СОДЕРЖАНИЕ

УДК 159

Abzalilova G.F., Khrenova K.V., Fatkullin I.G.

BULIMIA

Bashkir State Medical University, Ufa

A survey was conducted in the form of a questionnaire among a group of 30 people in order to determine the proportion and significance of heredity and age in the development of the disease "Bulimia" to obtain data on more frequent symptoms of the disease.The results obtained indicate the influence of heredity and age on the development of bulimia, which in turn leads to psychological disorders.

Key words. Bulimia, psychological condition.

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БУЛИМИЯ

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Проведено исследование в форме анкетирования среди группы лиц в количестве 30 человек с целью определения доли и значения наследственности и возраста в развитии болезни «Булимия» получения данных о более частых симптомах заболевания. Полученные результаты свидетельствуют о влиянии наследственности и возраста на развитие булимии, что в свою очередь приводит к психологическим нарушениям.

Ключевые слова. Булимия, психологическое состояние.

Relevance. Since 1980, bulimia nervosa has been included in the DSM, the most widespread American classification of mental disorders in the world, including the current version of DSM-IV-TR (2000). Until 1980, only anorexia nervosa was in the DSM eating disorders section; bulimia nervosa appeared in DSM-III (1980), as well as "atypical eating disorder"; in the next version of DSM-IIIR (1987), the latter was defined more clearly and called "nonspecific eating disorder"

Introduction. The title of our research work: "Bulimia-kinorexia, wolf hunger"

The purpose of our research work is to provide new information on the topic of our research.

Bulimia (kinorexia, wolf hunger) this is a disorder of eating, which is characterized by uncontrolled attacks of a sharp increase in appetite, accompanied by a strong feeling of hunger, weakness, pain in the upper abdomen.

The disease can develop in healthy people, but it is more common as a complication in people suffering from diseases of the central nervous system, endocrine system, as well as metabolic disorders.

Classification. Traditionally, bulimia is divided into two types: purifying or classical, and non-purifying. In the first case, patients abuse enemas, provoke an attack of vomiting, take diuretics and laxatives. Non-purifying bulimia is less common, overeating is compensated by hunger strike, active sports. According to the nature of attacks of gluttony , there are three types of the disease:

Paroxysmal. Periods of absorption of large amounts of food occur suddenly after some time after the "procedures" of purification. The duration of time without gluttony ranges from 6-12 hours to several days. Constant. Overeating is replaced by cleansing, almost immediately the appetite increases again. It is difficult to isolate seizures, patients consume food almost continuously. Night. Attacks of hunger and gluttony develop at night. In the daytime, the appetite is normal or reduced.

Reasons. In people suffering from bulimia, seizures can occur as a reaction to stressful situations and negative experiences (failure in something, anger, sadness, loneliness). Also, an attack can occur when a person feels fear, uncertainty or hears criticism of himself. Bulimia is the opposite of anorexia. People suffering from bulimia are much more difficult to identify than patients with anorexia or normal overeating, because they usually maintain a normal weight and health condition. By their behavior in the intervals between attacks, such people may not differ in any way from healthy people.

However, bulimia patients are more often characterized by almost complete uncontrollability, and, even in the intervals between attacks, a tendency to excessive use may manifest itself in relation to alcohol or medications. Despite the fact that the disease has been known to mankind for a long time, the causes of its autonomous occurrence still remain insufficiently studied. Therefore, modern medicine adheres to the following, the most likely causes of the disease, namely: severe stress, in which a person is in for a long time, and is not able to eliminate the cause that caused it, low self-esteem inherent in upbringing or in the process of growing up, which provokes stress, a state of constant self-doubt, bulimia more often affects people who were deprived of food as punishment for a misdemeanor in childhood, or vice versa, encouraged them for success with additional dishes, metabolic disorders in the brain due to the long-term effect of the toxin or chronic poisoning with chemicals, burdened heredity (someone from close relatives was diagnosed with bulimia).

Symptoms of bulimia. In addition to the main symptom of the disease - an attack of severe hunger, bulimia is characterized by other, indirect manifestations: • caries, • thinning or destruction of tooth enamel as a result of frequent vomiting • dehydration is also a consequence of repeated vomiting or uncontrolled laxative intake • scratches on the fingers of the hands that appear due to attempts to provoke a gag reflex.

The possibility of this symptom is due to the panic state of the patient immediately after the attack, combined with electrolyte disturbances and seizures; in other words, during vomiting, the patient may accidentally bite himself or damage the skin of his hands. Such damage under the repeated action of gastric acid does not heal for a long time – visible defects appear. The symptom

appears in advanced cases of the disease. Extremely rare, but extremely indicative – a healthy person, for sure, even with a strong desire, will not be able to cause such damage.

• inflammatory diseases of the esophagus, pharynx (laryngitis, pharyngitis, aspiration pneumonia is possible, due to the ingestion of vomit into the trachea) and the occurrence of a feeling of heartburn,

• muscle cramps or twitching caused by electrolyte imbalance • symptoms of impaired liver and/or kidney function (morning swelling of the extremities, increased blood pressure, development of cholecystitis)

• in rare cases - internal bleeding (when ingesting foreign bodies with food that can injure the gastrointestinal tract)

• digestive disorders

• violation of the menstrual cycle in women

It is also characteristic that after the end of the attack, a person, in most cases, feels a sense of shame about his behavior and seeks to get rid of the food he has eaten, artificially causing vomiting, uses diuretics or laxatives, exposes himself to physical exertion or starvation.

Complications. Forced emptying of the stomach and intestines leads to the development of persistent somatic diseases. Vomiting, increased diuresis and diarrhea provoke dehydration, violation of the water-electrolyte balance and kidney failure. Overeating and frequent vomiting can cause rupture of the esophagus or stomach. Vomit damages tooth enamel, increases the risk of tooth decay and gum disease. Abuse of laxatives forms dependence, intestinal hypotension, constipation. Cardiovascular diseases – arrhythmias, cardiomyopathies – are caused by magnesium and potassium deficiency, prolonged use of ipecacuanha syrup (emetic). On the part of the emotional and personal sphere, complications of bulimia are represented by affective bipolar and obsessive-compulsive disorders.

Diagnostics. One of the difficulties associated with the diagnosis of the disease is the difficulty of identifying the patient, due to his maintaining normal behavior in the intervals between seizures. Over time, the disease begins to become more severe, so if you find several symptoms of bulimia in yourself or people around you, you should contact a psychiatrist or a psychotherapist. To diagnose this disease, the doctor will be helped by the data of the patient's survey, the collection of anamnesis, the study of the patient's medical record, as well as the conduct of a number of psychological tests, for example, the "Attitude test to food". After that, the doctor must decide how much the patient needs hospitalization. Most often, bulimia treatment takes place without hospitalization, on an outpatient basis.

Prognosis and prevention. Complex treatment of bulimia takes 4-8 months, but provides high efficiency – 80% of patients are completely cured of pathological eating habits. Despite this, increased attention to body weight and meals remains, which increases the risk of relapse. The main preventive measure is the right attitude to food and appearance in the family. The habit of healthy eating is formed on the basis of a child's stable self-esteem, his self-confidence. It is forbidden to use food to reward success or to deprive food as punishment for mistakes and disobedience.

Conclusion Bulimia is a common disease. It qualifies as mental and is treated by a psychiatrist. This disease responds well to diagnosis and treatment. Difficulties arise precisely with the patient's treatment to the doctor. The realization that this help is needed comes to patients only with serious complications and lesions of other body systems: from cardiovascular to sexual. One thing is important: in order to get rid of the symptoms and negative effects on the gastrointestinal tract, cardiovascular and other systems of the body, complex therapy of bulimia and the work of several doctors of different specialties are needed. Knowing the first signs and symptoms, close people of the patient can contact medical institutions themselves and thereby protect a person from serious and sometimes irreversible consequences

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RESEARCH ACTIVITY OF RATS IN THE ALTERED PHOTOPERIOD

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The duration of light mode is an important component of the environment, constantly affecting the functional state of the organism. Changing the natural light mode — desynchronism — is applicable to many people, which is due not only to the peculiarities of the profession in adults, but also to the overload in schoolchildren. The authors identify main neuroendocrine mechanisms of regulation of biological clock, in which the hormones of epiphysis serotonin and melatonin play a key role.

Key words: circadian rhythms, day-night cycle, desynchronism, pineal hormones.

Ахметова Д.Ф., Рахматуллина А.И., Ханнанова А.Р., Межова Н.В.

ИССЛЕДОВАТЕЛЬСКАЯ АКТИВНОСТЬ КРЫС В УСЛОВИЯХ ИЗМЕНЕННОГО ФОТОПЕРИОДА

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Длительность светового режима является важным компонентом окружающей среды, постоянно влияющим на функциональное состояние организма. Смена естественного светового режима, десинхронизм, применим для многих людей, что связано не только с особенностями профессии у взрослых людей, но и перегрузками у школьников. Из результатов исследования циркадных(околосуточных) ритмов авторами выявлены основные нейроэндокринные механизмы регуляции биологических часов, в которых ключевую роль играют гормоны эпифиза серотонин и мелатонин.

Ключевые слова: циркадные ритмы, десинхронизм, суточный цикл, гормоны эпифиза.

At night, melatonin is released from the epiphysis into the blood, the secretion of which is subject to the daily dynamics and depends on the light [1]. Before the adrenal cortex awakens, hormones – glucocorticoids – begin to release stimulating hormones, the most active of which is cortisol. The control of circadian rhythm of organs and tissues is the suprachiasmic nucleus (SCN), which performs its functions by regulating the secretion of hormones by the hypophysis and adrenal glands as well as through the epiphysis [2,3]. Modulator mechanisms located in the SCN and epiphysis ensure the ordering of sleep and wakefulness. Violation of this biological pattern leads to desynchronosis and various diseases of the central nervous system (CNS) [4]. It is also known that people with circadian rhythm disorders have an increased risk of cardiovascular pathologies and cancer.

In the scientific literature, the question of the influence of photoperiod on the behavior of animals, in particular on models of positive swimming, and the study of the propulsive behavior is widely covered. The results obtained by the authors and their research support the conclusion that the initial break-up of biorhythms contributes to a change in the body's sensitivity to stress.

In order to assess the influence of a potential stressor, the “open field” test is widely used, since the nature of changes in the behavior of rats in this test is associated with the manifestation of a stress reaction [5]. Often authors working in this field, note the sexual characteristics of animal behavioral activity, analyze the individual-typological features of rat behavior in the «open field».

However, the question of the relationship between the sex of individuals and the age characteristics of their orienting-exploratory behavior remains insufficiently clear.

In connection with this, the aim of our work was to study the correlation between the sexual and age characteristics of the behavioral activity of rats under conditions of an altered photoperiod in the “open field” test, which includes the parameters of horizontal and vertical motor activity of rats under conditions of desynchronism.

The obtained parameters of research activity were analyzed in rats taking into account:

- age and sex;
- the temporal and quantitative parameters of horizontal activity in rats before and after the experiment;
- the temporal and quantitative parameters of vertical activity in rats before and after the experiment;
- the temporal and quantitative parameters of stress resistance in rats before and after the experiment.

The study was carried out on white rats of the line Wistar – males and females, which were kept in vivarium conditions at the Biology Department of Bashkir State University with free access to water and food.

We selected 36 rats for the study. All experimental rats were divided into 3 groups of 12 rats each.

- group №1 – 1 month old females (n=6) and males (n=6)
- group №2 – 3 monthly females (n=6) and males (n=6)
- group №3 – 6 month old females (n=6) and males (n=6)

Methods. The desynchronism state was modeled for 14 days by changing the natural light mode, that is, as it was dark outside, the light in the animals' room was turned on, and at dawn the artificial light was turned off. Windows in the room were covered with a light-tight material – foil.

The mobility of rats was studied in the «open field» test. Within 8 minutes the parameters were determined: *horizontal motor activity* (number of crossed squares), *vertical motor activity* (number of racks), *stress tolerance* (the number of bolus and the time of grooming).

Classic general behavioral test «open field», used separately, in modification or as part of the battery test, it provides a comprehensive assessment of controlled animal behaviour and serves as a platform for the research of pharmacological drugs and stress-induced disease models. In the mechanisms of emergent light stress when tested in an «open field» two main factors are: 1 - *unfamiliar environment* (novelty effect); 2 - *behavioral deprivation of the animal*.

The ethical principles of animal experimentation and the main provisions of the Helsinki Declaration are observed in the work. Research work carried out under the European convention for the protection of vertebrate animals used for experiments or other scientific purposes (Strasbourg, 18 March 1986) and order of the Ministry of Health of the Russian Federation №267 of 19 June 2003.

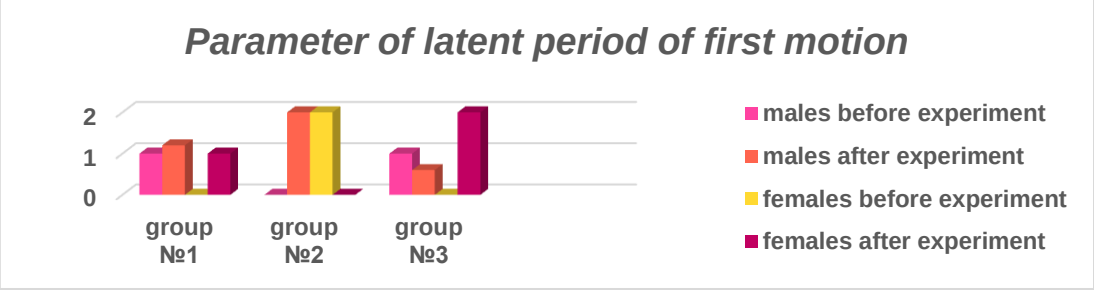
Findings.

Parameter of latent period of first motion (LPofFM).

In group №1, the mean of LPofFM increased after the experiment in both males and females. This suggests that stress levels have increased.

In group №2, male and female values are opposite: the mean of LPofFM increases in males after the experiment, in females the average LPofFM decreases in contrast. We can assume that females, unlike males, have adapted to the conditions that form the state of desynchronism in 14 days, so the stress level after the experiment has decreased.

In group №3, the average LPofFM was reduced after the experiment only in males, this indicator increases in females. The stress level after the experiment was increased.

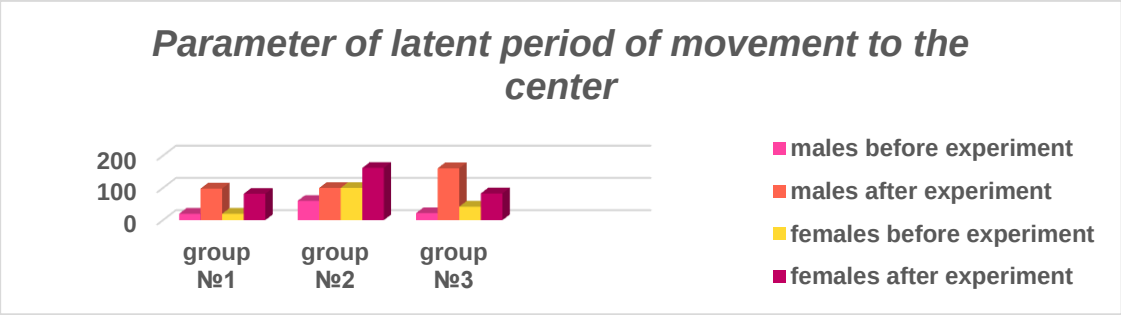


Parameter of latent period of movement to the center (LPofMC).

In group №1, the average LPofMC increases after the experiment in both males and females. This indicates a decrease in research activity.

In group №2, the results are similar to those of group №1.

In group №3, the results are similar to those of group №1.

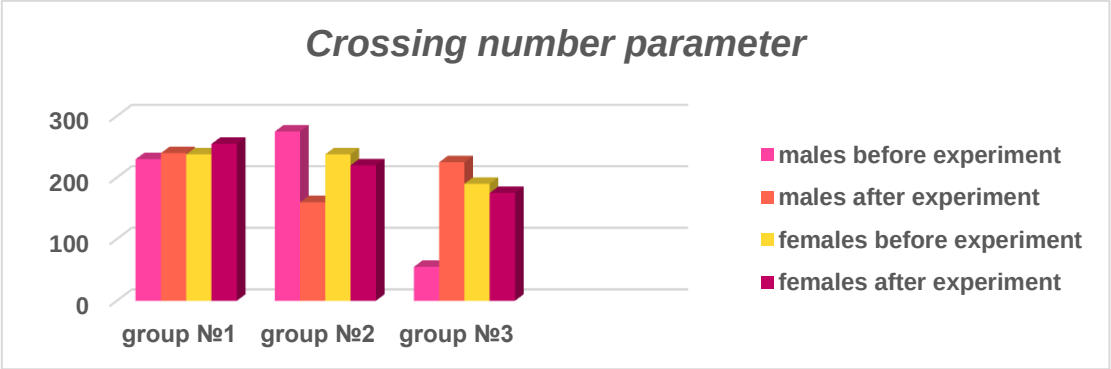


Crossing number parameter (CN).

In group №1, the average CN increases after the experiment in both males and females. Thus, the level of research activity increased after the experiment.

In group №2, the average CN decreased for both females and males after the experiment. The level of research activity has dropped.

In group №3, the results of females and males do not match. The CN value in males increases after the experiment, so the level of research activity has also been increased. In females, on the other hand, the CN value decreases after the experiment, because the level of research activity decreases. In females, the CN value decreases.

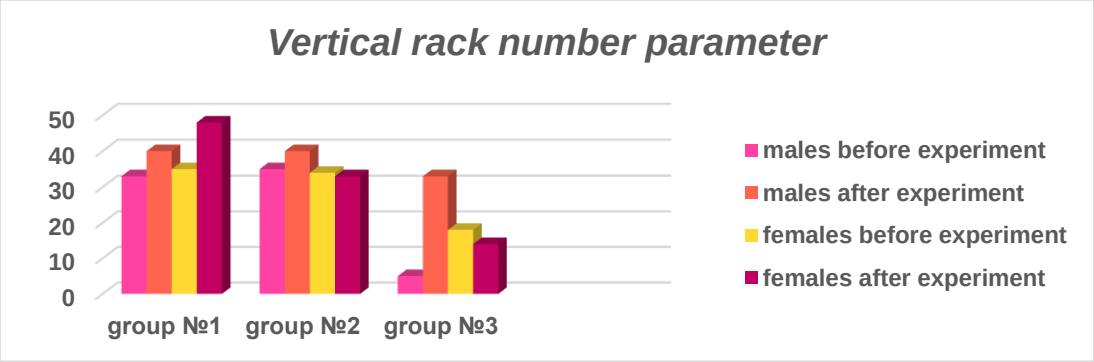


Vertical rack number parameter (VRN).

In group №1, the average number of uprights increases in both females and males after the experiment. This suggests that the level of research activity has also increased.

In group №2, the parameter VRN value increased after the experiment in males. The level of research activity also increased. In females, parameter VRN was slightly lowered after the experiment, indicating the effect of stress on research activity.

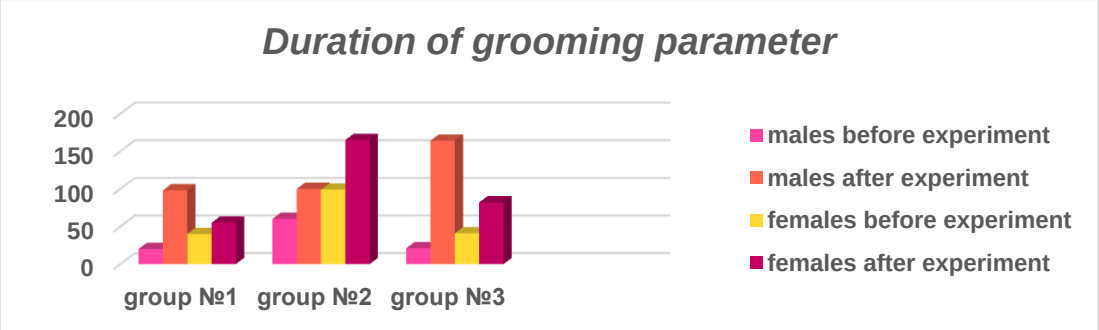
In group №3, the results of males and females do not match. The average number of vertical racks increases after the experiment in males, indicating an increase in research activity. Females show a decrease in the number of vertical racks, indicating a decrease in research activity.



Duration of grooming parameter (DofGr).

The higher level of anxiety is associated with a shorter gestation period and fewer episodes.

In groups №1, №2, №3 the gestation time is reduced after an experiment in both males and females. This indicates an increase in anxiety levels in individual.

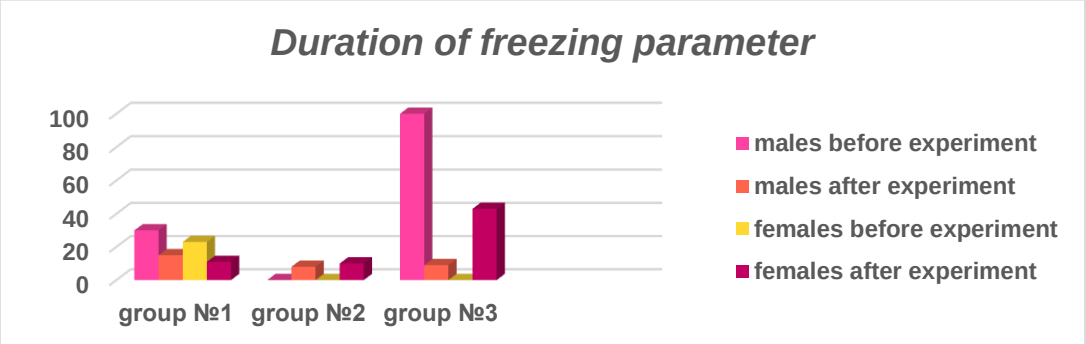


Duration of freezing parameter (DofFr).

In group №1, after the experiment, the average time of freezing increased in both males and females. This suggests an increase in animal anxiety.

In group №2, after the experiment, the average time of freezing increased in both males and females. This is the result of increased stress.

In group №3, the duration of freezing after the experiment decreased in males, while females increased. From this we can conclude that the degree of anxiety decreased in males and increased in females.



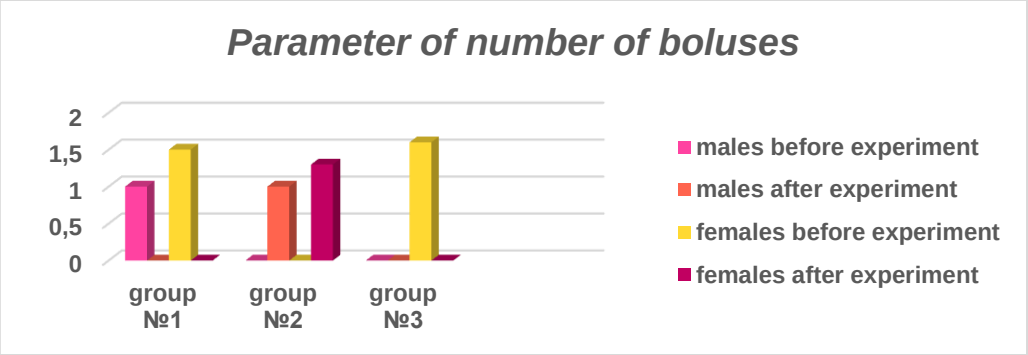
Parameter of number of boluses (NofB).

The presence of bolus indicates a decrease in anxiety.

In group №1, defecation was observed in both females and males prior to the experiment, indicating a lack of stress. After the experiment, the defecation ceased, so we can assume that the level of anxiety has increased dramatically.

In group №2, no bolus was observed prior to the experiment because the animals were under stress. After the experiment, NofB levels increased dramatically, indicating a decrease in anxiety.

In group №3, no male was detected either before or after the experiment, so we can assume that the stress level has remained the same. Female defecation occurred prior to the experiment and ceased after the experiment. This suggests increased anxiety in females.



Discussion. Based on the table below, we can assume that in individuals of group №1 (males and females 1 month old), research activity after the experiment remains high despite the influence of stress caused by the state of desynchronism.

The research activity of group №2 individuals (females and males 3 months old) is reduced compared to group №1. It should also be noted that females were able to cope with anxiety much better than males, their research activity was correspondingly higher.

In group №3 (females and males 6 months old), the results are the opposite: females were much worse at handling stress, reflecting many parameters. Consequently, their research activity was lower than that of males.

	LPofFM	LPofMC	CN	VRN	DofGr	DofFr	NofB
Group №1	stress	RA↓	RA↑	RA↑	RA↑	RA↑	stress
Group №2	♂ stress ♀ comfort	RA↓	RA↓	♂ RA↑ ♀ RA↓	RA↑	RA↓	stress
Group №3	♂ comfort ♀ stress	RA↓	♂ RA↑ ♀ RA↓	♂ RA↑ ♀ RA↓	RA↑	♂ RA↑ ♀ RA↓	♂ ↕ ♀ stress

LPofFM – parameter of latent period of first motion

LPofMC – parameter of latent period of movement to the center

CN – crossing number parameter

VRN – vertical rack number parameter

DodGr – duration of grooming parameter

DofFr – duration of freezing parameter

NofB – parameter of number of boluses

RA – research activity

♂ – male

♀ – female

↑ – increase

↓ – decrease

↕ – no changes

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УДК 616.831-005

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REHABILITATION AFTER A STOKE AND HOW TO ACHIEVE A QUALITY LIFE

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This article is devoted to the topic of recovery and treatment of stroke. Recovery method are considered in this article: kinesotherapy, massage, physiotherapy, magnetostimulation , and each method is described in detail. The article addresses the issue of post-stroke cognitive impairment. It deals with methods of treatment that are based on the restoration of blood circulation in the brain.

Key words: rehabilitation, ischemic stroke, stroke, brain.

Александрова У.А., Валитова К.Э., Свистунова Ю.А., Межова Н.В.

РЕАБИЛИТАЦИЯ ПОСЛЕ ИНСУЛЬТА И КАК ДОБИТЬСЯ КАЧЕСТВЕННОЙ ЖИЗНИ

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Данная статья посвящена теме восстановления и лечения инсульта. Рассмотрим методы восстановления: кинезотерапия, массаж, физиотерапия, магнитостимуляция, далее подробно опишем каждый метод. Также поговорим о постинсультном когнитивном нарушении. Опишем способы лечения, которые основаны на восстановлении циркуляции крови в головном мозге.

Ключевые слова: реабилитация, повторный инсульт, инсульт, головной мозг.

Stroke is a clinical syndrome of impaired brain function, through an acute violation of cerebral circulation, of cerebral circulation, and refers to diseases of the cardiovascular system.

Damage occurs due to the cessation of blood flow to a particular part of the brain or hemorrhage when a blood vessel ruptures.

Impairment of circulation leads to the death of nerve cells with subsequent damage to the work of many body systems.

According to the World Health Organization, stroke is the second leading cause of death worldwide. Every year in the Russian Federation, a stroke occurs in 450 thousand people, and among the population of the whole world this figure rises to 5-6 million. Among stroke survivors, about 30% of patients lose the ability to care for themselves, about 20% remain disabled, and only 23% remain able to work.

It occurs in people regardless of sex and age, but most often affects the elderly. After the age of 60, the of occurrence increases dramatically and doubles after every 10 years. Seventy-five percent of all reported stroke cases are in patients 65 years of age or older.

Stroke leads to impaired physical activity - a lack of movement due to being forced to lie down for long periods of time. Lack of motor activity is unnatural for the human body. Without movement, the body's muscles atrophy.

Cognitive functions also suffer, which is expressed in a decrease in the ability to normally perceive, remember and process information.

A defect in speech and inability to understand it, which may affect the impossibility of communication, leading to psychological problems of the patient.

The purpose of this article is to study the problems faced by stroke patients and to explore ways to adapt during a difficult recovery period.

Post-stroke cognitive impairment (PSCI)

In addition to the above-mentioned disorders, patients in the post-stroke period also experience cognitive decline. Post-stroke cognitive impairment (PSCI) slows the patient's recovery process, reduces quality of life not only for the patients themselves, but also for their caregivers. Further development of PSCI may entail the development of a recurrent stroke.

PSCI is any cognitive impairment that has an established link to the stroke and occurs within the first 3 months. These are so-called early PSCI s, but can also be detected late, which is no more than one year after the stroke. A distinctive feature of PSCI from Alzheimer's disease is the reversibility of the process, so early detection and correction can stabilize the patient's condition.

To the factors of development of PSCI and dementia:

1. Age over 60.
2. Asian and black races are more prone to development of PSCI and dementia.
3. Bad habits: alcohol, cigarettes, drugs.
4. Pre-stroke brain lesions.
5. A number of diseases such as diabetes mellitus, arterial hypertension, atrial fibrillation, coronary heart disease.

The clinical picture of vascular cognitive impairment includes a delayed reaction, the difficulty of focusing on one thing, a decrease in analytical thinking, planning and organization, and a violation of speech activity also manifests itself. Patient has difficulty in learning and mastering new skills.

At the moment, there is no definite principle for the treatment and diagnosis of cognitive impairment. The main direction of the patient's treatment is aimed at preventing a second stroke, which includes diet, abandoning bad habits, taking hypolipidemic medications for cerebral atherosclerosis, taking antiplatelet anticoagulants for cardioembolic stroke.

Rehabilitation after the stroke

Rehabilitation of a patient in a post–stroke state is a set of measures aimed at improving the quality of life of the patient, which includes full or partial restoration of impaired functions,

adaptation of the patient in society, as well as prevention of recurrent stroke. The topic of rehabilitation is quite relevant due to the high prevalence of stroke in the population and the high disability of stroke patients.

The tasks of post-stroke rehabilitation are:

1. Restoration of impaired functions
2. Social and mental adaptation of the patient
3. Prevention of complications in the post-stroke period
4. Prevention of recurrent stroke

The time after a stroke that is important from the point of view of rehabilitation is divided into 4 periods.

• The acute period is the first 3-4 weeks after a stroke.

• Early recovery period – includes the first 6 months.

• Late recovery period – lasts from 6 months to a year.

• Residency period – has a duration of more than a year.

The success of recovery after a stroke is the fulfillment of the following criteria:

1. Start recovery as soon as possible. The early start of rehabilitation is important in restoring a comfortable life for the patient.
2. The recovery process must proceed systematically without stopping.
3. For more effective recovery, different methods should be used.
4. Active participation in the rehabilitation of the patient and his family.

The following methods of early rehabilitation after a stroke are known: kinesitherapy, massage, physiotherapy, magnetic stimulation. Each method is described in detail. Kinesiotherapy is a treatment with active and passive movements aimed at developing and improving the mobility of large, small joints segments of the spine, increasing the elasticity of tendons, muscle tissue. Active kinesotherapy is characterized by the active and conscious participation of the patient. Passive kinesotherapy is the forms and means by which the patient participates passively, the movements are performed by a kinesotherapist or with the help of special apparatuses and devices, including robotic ones. Performing certain physical exercises normalizes the movement of nerve impulses along the conducting nerve pathways, normalizing the processes of excitation and inhibition.

Massage - this manipulation promotes relaxation of the patient, helps reduce the production of the stress hormone cortisol and increases serotonin levels. That is, not only the physical, but also the psychological state of the person is improved

It is recommended to start the procedure 1-2 weeks after a stroke. In the first stages, manipulation involves light stroking and rubbing, which help prevent muscle atrophy. Due to the weakened state of the patient, manipulation is best tolerated during the daytime. It should be carried out on an empty stomach and with an empty bladder. A warm shower is also recommended before the session, which will help prepare the muscles for exposure. Massage is carried out in a warm place, the optimal temperature is 22-23 degrees Celsius. The duration and intensity of the procedures increases gradually.

Benefits of the procedure:

1. Improvement of blood circulation and activation of lymph outflow
2. Normalization of muscle tone and elasticity.
3. Strengthening the general condition of the body.
4. Prevention of the formation of contractures (restriction of movement in the joints).
5. Removal of puffiness, restoration of vascular tone and elimination of congestion.
6. Prevention of the appearance of bedsores and trophic ulcers.
7. Normalization of the nervous system.
8. Elimination of numbness and pain in the limbs.

Transcranial magnetic stimulation (TMS) is a painless non-invasive method of treatment, a modern neurophysiological method that allows both therapeutic and diagnostic purposes to investigate the functional state of the motor system in various diseases of the central and peripheral nervous system, accompanied by movement disorders. Therapy has proven to be a successful and promising way to prepare the patient's brain for further restoration of lost skills and functions. Skill restoration requires preparing neurons so that they can take on the responsibilities of nearby damaged nerve cells. The parameters of the procedure are prescribed for each patient based on the individual characteristics, causes and symptoms of the disease and the objectives. After the cells have been prepared in this way, it is necessary to carry out a therapy aimed at activating their work and at "training" them to perform their lost functions. For this purpose, a comprehensive treatment using widespread effect on the human body is carried out.

In the complex rehabilitation of a patient after a stroke, various methods of physiotherapy are used, but the most studied and aimed specifically at restoring motor function is electrostimulation.

Other physiotherapeutic methods (heat therapy, magnetotherapy, shock wave therapy) are mainly aimed at improving local blood flow in tissues and preventing contractures, but do not

contribute to motor learning. Therefore, in motor rehabilitation, physiotherapeutic methods can be prescribed in addition to the basic methods, i.e. not isolated.

Conclusion

The rehabilitation of patients after the stroke requires the organization of a complex system of care with the obligatory consideration of the specifics, clinical features and variants of the course of the disease. It implies correction of motor, cognitive, and speech disorders, as well as social adaptation. Along with the numerous approaches to patient rehabilitation, new, unconventional methods are being created, which have shown their effectiveness in patient recovery. The prognosis is largely determined by the size and location of the affected area of the brain, as well as the accuracy and completeness of rehabilitation measures.

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УДК 616

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DISEASES THAT HAVE ARISEN TO ADVANCED TECHNOLOGIES

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Technological advancements have revolutionized the way we live our lives. From smartphones to electric cars, technology has changed the way we communicate, work, and even travel. However, with these achievements have brought new challenges to our health. The use of advanced technologies has led to the development of new diseases that have been never seen before. These illnesses range from vision and postural problems to psychological and social issues, all of which can have long-lasting consequences on our health and well-being.

***Key words*:** advanced technologies, text neck, electrohypersensitivity.

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ЗАБОЛЕВАНИЯ, ВОЗНИКШИЕ ИЗ-ЗА ПЕРЕДОВЫХ ТЕХНОЛОГИЙ

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Технический прогресс произвел революцию в том, как мы живем. Технологии, от смартфонов до электромобилей, изменили то, как мы общаемся, работаем и даже путешествуем. Однако с этими достижениями появились новые проблемы для нашего здоровья. Использование передовых технологий привело к развитию новых болезней, которых раньше никогда не было. Эти заболевания варьируются от проблем со зрением и осанкой до психологических и социальных проблем, и все они могут иметь долгосрочные последствия для нашего здоровья и благополучия.

***Ключевые слова*:** передовые технологии, текстовая шея, электрогиперчувствительность.

Relevance: the use of advanced technologies has led to the development of new diseases that have been never seen before. These illnesses range from vision and postural problems to psychological and social issues, all of which can have long-lasting consequences on our health and well-being.

Objective: the purpose of this work is the competent use of advanced technologies to maintain the health and well-being of citizens

Materials and methods: this paper discusses various types of diseases that occur when working with modern technologies.

Postural problems. Postural problems are also growing due to the development of technology. People who spend a long time sitting in front of a computer or using other digital devices tend to have a stooped posture. This condition can lead to various pains, such as in the back or neck. Poor posture can also result in muscle imbalances, which can lead to osteochondrosis and other diseases of internal organs.

Text Neck. As mobile devices have become more common, we spend more and more time staring down at them. This has resulted in a new type of neck pain called "text neck." The repetitive stress caused by holding the neck in a forward position has led to pain, stiffness, and even headaches. Text neck can be avoided by holding the phone or tablet at eye level and taking frequent breaks.

Computer Vision Syndrome. Computer Vision Syndrome is a condition that arises from being too close to screens for extended periods. It can cause eye strain, headaches, and dry eyes. The blue light emitted by screens is also thought to be a contributing factor to disrupted sleep patterns. To prevent computer vision syndrome, it is recommended to take frequent breaks from screens and follow the 20-20-20 rule, where you look away from the screen every 20 minutes for 20 seconds at a time.

Electrohypersensitivity. Electrohypersensitivity, or EHS, is a condition where individuals develop symptoms such as headaches, fatigue, and dizziness due to exposure to electromagnetic fields (EMFs). Electromagnetic fields are generated from common electronic devices such as cell phones, Wi-Fi routers, and microwaves. However, there is no conclusive scientific evidence to support the existence of EHS.

Digital Addiction. Digital addiction has become a growing concern in recent years. With the increased use of social media, video games, and other digital entertainment, many people have begun to develop addictive behaviors. Digital addiction can lead to social isolation, depression, and other mental health problems. It is essential for individuals to monitor their digital usage and take steps to limit their exposure to digital media.

Psychological and social issues. Psychological and social issues have also arisen due to advanced technologies. Social media addiction, cyberbullying, and online harassment have all become major concerns in recent years, leading to mental health problems such as depression, anxiety, and low self-esteem. The constant need for validation and approval from others online has also led to a significant increase in cases of self-harm and suicides in young people.

Carpal tunnel syndrome. Another disease that has become increasingly common due to technology is carpal tunnel syndrome. This condition affects those who use a computer or other digital devices for prolonged periods. Repetitive hand movements can cause inflammation and swelling in the wrist, leading to numbness, tingling, and weakness in the hand and fingers.

Results and discussion: while advanced technologies have undoubtedly brought numerous benefits and conveniences to our lives, it is essential to acknowledge the health risks that have arisen due to its effects. We must learn to use technology responsibly and take the necessary

precautions to protect ourselves from these diseases and health problems. Reducing screen time, taking regular breaks, and maintaining proper posture are all important steps we can take to prevent these health issues from occurring. Only then can we continue to enjoy the benefits of advanced technologies without compromising our health and well-being.

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SUSCEPTIBILITY TO DEPRESSION OF STUDENTS OF HIGHER EDUCATIONAL INSTITUTIONS OF UFA

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Depression is a mental disorder characterized by persistent despondency, depression, irritability, loss of pleasure or interest in activities for 14 or more days. Scientists believe that the cause of this mental disorder is a disturbance of neurotransmitter activity in the neurons of the limbic system, leading to a change in the synthesis of various neurotransmitters. Depressive disorders are extremely dangerous. They have serious consequences: development of cardiovascular diseases, exacerbation of chronic disorders, the emergence of dependence on narcotic drugs, desocialization.

Key words: depression, diagnostics, Zang scale, students, youth.

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ПОДВЕРЖЕННОСТЬ ДЕПРЕССИИ СТУДЕНТОВ ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЙ ГОРОДА УФЫ

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Депрессия – психическое расстройство, характеризуемое стойким унынием, подавленностью, раздражительностью, потерей удовольствия или интереса к деятельности в течение 14 и более дней. Ученые полагают, что причина данного психического расстройства заключается в нарушении нейромедиаторной активности в нейронах лимбической системы, приводящем к изменению синтеза различных нейромедиаторов. Депрессивные расстройства крайне опасны. Они несут серьезные последствия: развитие сердечно-сосудистых заболеваний, обострение хронических расстройств, появление зависимости от наркотических средств, десоциализация.

Ключевые слова: депрессия, диагностика, шкала Занга, студенты, молодежь.

Relevance: depression is called a disease of the 21st century. At the moment, Russia ranks 4th in the world by the level of depressive disorders and anxiety (about 8 million patients). Undoubtedly, the most terrible outcome is a suicide attempt. About 17192 suicides were committed in our country only in 2019. Most of all, young people aged 15-24 years are susceptible to this disease. The reason for this may be a sudden change of situation, moving from the parental home, the emergence of a new social circle, low physical activity, a large academic load, constant stress. Such kind of experience negatively affects the effectiveness of learning, leads to health problems. In addition, the personality is being formed in this period and students make choice in which sphere they want to develop. Therefore we believe that prevention and early diagnostics of student's depressive disorder are essential.

Objective: the purpose of the article was to compare the level of depressive disorders of first-year students of higher educational institutions of Ufa, as well as to study various ways of preventing depression.

Materials and methods: the object of research was 75 respondents who study in the first year: 25 of them were from Bashkir State Medical University, 25 were from Bashkir State Pedagogical University and 25 were from Ufa State Petroleum Technical University. Data acquisition and analysis was carried out using the Zang Scale for self-assessment of depression. This scale is the most effective for the preliminary diagnosis of depressive disorder. The test consists of 20 questions (10 positively formulated statements and 10 negative ones) which allow you to determine 4 levels of depression (normal state, mild, moderate and high severity). Data processing was carried out in the Microsoft Excel 2019 program.

Results and discussion: according to the Zang scale, the level of depressive disorder is determined by the number of points scored during testing. Criteria for interpreting the results:

20-49 for normal condition

50-59 for mild severity of depressive disorder

60-69 for moderate severity of depressive disorder

70 and above for high severity of depressive disorder.

After analyzing the test results, we came to the conclusion that the average number of the psychological state of the students of the universities is approximately the same: for USPTU, the average score was 36.3; for BSPU - 39.2; for BSMU - 40.8. According to the interpretation of the Zang scale, the average indicators obtained by us are within the norm for all analyzed universities. However, after considering each questionnaire separately, we found out some specificities. For example, 20% of the first-year students from BSMU have mild depressive disorder (50-59 points), and 8% have moderate depressive disorder (60-69 points). In BSPU, mild severity of depression was revealed in 32% of the first-year students, and in USPTU- only in 4%.

Conclusion: using the Zang scale, we found out that most of the students of the analyzed universities are in a normal mental state. At the same time, some first-year students were found to have mild depressive disorders, which is explained by the individuality of each person's psyche, that is, people react differently to the same circumstances. We explained the data of moderate severity of depression in medical university students by a high academic load and a large amount of educational material combined with low physical activity.

Thus, we found that depression is quite common among students of the analyzed universities, which means that it is necessary to take measures to prevent its development in young

people. Walking in the fresh air, healthy eating, physical activity, communication with relatives, going to concerts with friends, camping and fishing, dancing and singing- all of these can reduce the number of psychological ailments of youth.

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УДК 338

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RECREATIONAL LOAD OF LAKE ASLYKUL

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There is hardly a more important global problem these days than the sustainable use of natural resources and the protection of the natural environment. Everyone has to deal with nature every day, and its present state is such that it requires a very cautious and competent attitude. The accelerating pace of resources has made the issue of protecting specially protected areas in the Republic of Bashkortostan acute.

Key words: lake, Aslykul, recreational load, ecology.

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РЕКРЕАЦИОННАЯ НАГРУЗКА ОЗЕРА АСЛЫКУЛЬ

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Едва ли можно назвать в наши дни более важную глобальную проблему, чем рациональное использование природных ресурсов и охрана окружающей природной среды. Всем ежедневно приходится сталкиваться с природой, а современное ее состояние таково, что требует очень осмотрительного и грамотного отношения. Ускоряющие темпы ресурсов, привели к тому, что в Республике Башкортостан стал острым вопрос об охране особо незащищенных территорий.

Ключевые слова: озеро, Аслыкуль, рекреационная нагрузка, экология.

Relevance. The most important problem facing humanity at the present time is the problem of environmental education. In this regard, the main task is the formation of ecological consciousness in people, starting from childhood. It is for this purpose that we decided to conduct a sociological survey among the participants of the educational process.

The purpose of the study. To analyse the recreational load of Lake Aslykul and to identify a set of measures to restore the lake's hydrological regime and to maintain its ecological balance.

Materials and methods of research. Object of study: Lake Aslykul

We used the following methods to achieve our objectives:

-survey;

-observation;

-comparison;

-description;

-statistics;

-a method for the visual decoding of space images.

We decided to conduct a survey on the largest lake in our republic – Lake Aslykul. Excluding the hint, we did not write the topic of the survey.

The survey participants were asked 5 questions:

1. Your age.

2. Which lake is the largest in the Republic of Bashkortostan?

3. Which of the lakes of the Republic of Belarus do you prefer to go on vacation / would you prefer to go?

4. Do you know where the Usen – Ivanovsky Nature Reserve is located?

5. Have you heard before about the Berkazan-Kamysh swamp. which in the XIX - XX centuries was known as the largest wetland of Bashkiria, where various migratory birds lived, including the curly pelican?

Results and discussion. 197 people participated in the survey, 60.9% of them were schoolchildren, 33.5% were people aged 22-50 years. It turned out that 34% of respondents do not know that Aslykul is the largest lake in the Republic of Bashkortostan, most of these responses among respondents aged 22 to 50 years. 45.2% of respondents prefer to relax on the territory of Lake Kandrykul. The answers to questions No. 3 and No. 4 indicate that more than 66% of the survey participants are not educated on the issues of protected areas of our Republic.

Conclusion and conclusions. As a result of the work carried out, the following main conclusions can be drawn.

1. A sociological survey was conducted among the participants of the educational process, covering 197 people. Proposal: to hold an environmental education event.

2. The features of Lake Aslykul have been studied.

3. The recreational load of Aslykul and Kandrykul lakes is analyzed.

4. factors influencing the hydrological regime of Lake Aslykul and the reasons for the decrease in its water level.

5. A set of measures has been defined to restore the hydrological regime of Lake Aslykul and maintain its ecological balance:

-In the reserve "Usen-Ivanovsky" to organize environmental actions "Plant a tree" in order to restore the natural natural complex;

-Restoration of the Berkazan-Kamysh swamp;

-Carrying out anti-erosion measures: compliance with the norms of grazing and recreational loads, taking into account soil and climatic conditions, the magnitude of meltwater flows, the steepness of the slopes and the characteristics of each site; strip planting of shrub vegetation across the slope, brow ravines and catchment areas;

-To carry out monitoring work on the study of environmental the state of the coastal zone of Lake Aslykul and measures to control the recreational load on the ecosystem of Lake Aslykul.

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PRION DISEASES

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Prion diseases are slowly progressive brain damage associated with infectious prion proteins. The symptoms of these diseases are dementia, motor disorders, damage to the extrapyramidal pathways, mental and neurological disorders.

Key words: prion diseases, dementia, nervous system.

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ПРИОННЫЕ БОЛЕЗНИ

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Прионные болезни – это медленно прогрессирующее поражение головного мозга, связанное с инфекционными белками (прионами). Патогномоничные симптомы данных заболеваний заключаются в развитии деменции, поведенческих, двигательных нарушений, экстрапирамидных расстройств, других неврологических и психопатических признаков.

Ключевые слова: прионные болезни, деменция, нервная система.

In humans, prions cause Creutzfeldt—Jakob disease, Gerstmann—Straussler—Scheinker disease, fatal familial insomnia, and some others. In connection with outbreaks of PZ in mammals, there are concerns about the possibility of transmission of TGE to humans, in particular spongiform encephalopathy of cattle (mad cow disease), chronic debilitating disease of deer and elk. A deeper understanding of the pathogenesis of PD can lead to an expansion of the spectrum of these diseases due to forms that were not previously considered as such or had an unidentified etiology, and at the same time allows us to count on the development of effective therapy for PD.

Objective: the purpose of this work is to familiarize with the symptoms of this disease, clinical significance

Materials and methods: this article discusses prion diseases that occur when eating raw meat products

Prion diseases are slowly progressive brain damage associated with infectious prion proteins. The symptoms of these diseases are dementia, motor disorders, damage to the extrapyramidal pathways, mental and neurological disorders.

This condition was first described by German doctors Jacob and Creutzfeldt in 1920-1923. At the end of the twentieth century, the American scientist Pruziner discovered pathogens – prion proteins. Prion diseases are found in all countries of the world. People of any age can get sick with this disease.

The cause of diseases are infectious prion proteins - a group of pathogens consisting mainly of modified protein that does not contain nucleic acids. The source of the disease is a sick person or animal. These altered proteins can be inherited. A person can become infected when eating, especially raw meat products, when manipulated by medical personnel, for example, during blood transfusion. In addition, newborn babies may be born sick from an infected mother. And the disease can be transmitted during sexual contact between a man and a woman.

Doctors are primarily susceptible to the disease. These are surgeons, obstetricians, gynecologists, pathologists. Laboratory workers, veterinarians, meat processing industry workers, cooks, drug addicts can also get infected.

Scientists believe that during normal processes, the brain contains a prion protein, the secondary structure of which is represented by an alpha helix. This protein takes part in the transmission of the pulse. If the alpha helix is transformed into a betta-folded structure, a pathological form is formed, and the protein changes its structure. Accordingly, the functions performed by him in the normal state also change.

Prion diseases are characterized by a long incubation period. Moreover, symptoms may appear after several years. The first symptom is dementia. The patient cannot satisfy his needs, he is often annoyed with others. There is also a gradual loss of memory. Later, the patient has problems with urination. Some may experience constant muscle tension.

Creutzfeldt-Jakob disease

The first thing the patient complains about is a violation of mental activity. The patient is characterized by an apathetic state. Often people complain of severe headaches. Vision changes, hearing is impaired. And the patient complains of constant insomnia.

Kuru

Symptoms at the beginning of the disease are headache and joint pain. Then there is a strong weakness, trembling of the arms and legs, as well as the head. If the disease develops quickly, the patient develops dementia. Further, people lose a lot of weight, since they cannot chew and swallow food. In addition, urination and defecation are disturbed.

Alpers syndrome

This condition is characteristic of infants. There are generalized convulsive seizures. The child is lagging behind physically and mentally. Children are born with pathologies such as microcephaly, deformity of the bone system, low body weight. The disease can also occur at the age of 16-18.

Treatment of prion diseases. Patients should be hospitalized. Symptomatic treatment includes the use of antidepressants, anticonvulsants and painkillers. In etiological treatment, infusion solutions and antiepileptic drugs are used.

Unfortunately, mortality in prion diseases is 100%.

Prevention is disinfection and sterilization in hospitals, during endoscopic procedures, in pathology departments, food processing, do not eat raw meat.

Result and discussion: The study of prions and the diseases they cause is a new, rapidly developing field of biomedical research. The problem of these diseases, remaining exotic until recently due to their great rarity in the human population, has acquired important scientific and practical significance in recent years

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PREVALENCE AND HEALTH EFFECTS OF ELECTRONIC CIGARETTES

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The article is devoted to the study of the prevalence and health effects of electronic cigarettes. The article presents the main characteristics of electronic cigarettes, the mechanism of their action on the human body and the consequences for health. The results of studies on the effects of e-cigarette use and their impact on adolescents are also considered.

Key words: electronic cigarettes, prevalence, health effects, mechanism of action, health consequences, research, adolescents.

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РАСПРОСТРАНЕННОСТЬ И ВЛИЯНИЕ НА ЗДОРОВЬЕ ЭЛЛЕКТРОННЫХ СИГАРЕТ

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Статья посвящена исследованию распространенности и влияния на здоровье электронных сигарет. В статье представлены основные характеристики электронных сигарет, механизм их действия на организм человека и последствия для здоровья. Также рассматриваются результаты исследований последствий употребления электронных сигарет и их влияния на подростков.

***Ключевые слова*:** электронные сигареты, распространенность, влияние на здоровье, механизм действия, последствия для здоровья, исследования, подростки.

Relevance: Currently, electronic cigarettes are one of the most common means of smoking. However, many studies associate their use with a number of dangers to human health. In addition, e-cigarettes are especially popular among young people and adolescents who have not yet reached the maturity to realize the risks of smoking. As a result, the use of electronic cigarettes can lead to the formation of a bad habit and subsequently to life-threatening consequences. In this regard, the problem of the prevalence and harm of electronic cigarettes is very relevant.

Purpose of the work: Determination of the scale of this problem and its impact on the health of modern society. As well as identifying the specific consequences of the use of electronic cigarettes on human health.

Materials and methods: The study of various sources of information, analysis of the information received, and conclusion.

Results and Discussion:

1. Positioning by tobacco companies.

It is known that tobacco companies promote e-cigarettes as a harmless way to get rid of tobacco addiction. This opinion causes a protest of the pharmaceutical industry. ENDS and HTP are also in the "gray zone" between tobacco laws and drug approval processes. Tobacco companies claim that they give smokers a choice between cigarettes and a safer alternative. The tobacco industry also uses vapors and vapor products in its marketing strategy to promote electronic cigarettes. Advertising vaping as a smokeless product supports the impression that such products are safe. Marketing campaigns can attract young people to smoking who would never be interested in cigarettes.

2. Prevalence.

There is a steady increase in the number of e-cigarette users all over the world. If in 2011 only about 7 million smokers were registered, by 2016 this figure had already reached 35 million. According to forecasts, by 2025, the number of e-cigarette users may reach 55 million people in the United States and more than 17 million people in Europe.

Initially, e-cigarettes were developed to increase sales by leading tobacco companies in the USA and European countries. At the moment, the sale of electronic cigarettes is allowed in most countries of the world, with the exception of some. Sales continue to grow exponentially. Wells Fargo Bank's forecasts say that by 2017, the total volume of sales of electronic cigarettes has reached $ 10 billion, which is comparable to the sales of conventional cigarettes. The three largest tobacco companies in the US will share about 75% of the total profits from the sale of electronic cigarettes in the next 10 years.

In the Russian market, the volume of ES sales in 2015 amounted to about 8 billion rubles. According to a study by narcologists, 8.5% of teenagers in Russia aged 13-15 years use electronic cigarettes. Among boys, this figure is 10.3%, and among girls - 6.8%. Among students in grades 9-11, 31.5% answered in the affirmative to the question "Do you smoke?", while 20% of girls and 43% of boys were smokers. In addition, 35% of schoolchildren use electronic cigarettes, as well as smoke hookah and vapes.

3. The effect of electronic cigarettes on the human body.

According to a WHO report, e-cigarettes can have a variety of harmful effects on the human body. When using pure ENDS, an aerosol is formed containing many toxic substances, including glycols, aldehydes, metals and silicate particles. These harmful substances can negatively affect human health, causing pathological changes.

The composition of e-liquids may also include nicotine, which causes dependence and adversely affects the health of the fetal brain in the prenatal period and the adolescent brain. The temperature in electronic cigarettes reaches 100-350 ° C.

In addition, the content of harmful substances in the aerosol of electronic cigarettes can be much higher than in traditional cigarettes, and the levels of metals such as lead, chromium and nickel can exceed acceptable standards. The aerosol contains nicotine, which can cause diseases of the cardiovascular system and participate in the development of oncological and neurodegenerative diseases.

There are a huge number of different flavors that are added to liquids, and their effect on human health has not been sufficiently studied. Many flavors can irritate the respiratory tract and increase the risk of infection.

Passive inhalation of smoke/vapor from electronic cigarettes can also have a negative impact on health. The content of harmful substances may be higher than with passive smoking of conventional cigarettes, which increases the risk of diseases.

4. Researches.

4.1. Analysis of the smoke composition.

Scientists from Krasnodar, working at the FSBSI All-Russian Scientific Research Institute of Tobacco, Shag and Tobacco Products, studied the properties of smoke released when smoking electronic cigarettes. Data on the carbon monoxide (CO) content when using devices in experimental mode show that the amount of CO ranges from 0.18 to 1.18 mg/puff. This means that smoking electronic cigarettes can cause more harm to health than regular cigarettes.

4.2. General well-being.

According to the survey, the majority of men aged 18 to 25 years prefer analog methods of smoking. Among the respondents, almost a third noted a deterioration in sleep, and more than half complained of a deterioration in well-being, including cough, heart disorders, shortness of breath and increased sweating.

4.3. Effects on the cardiovascular system. German researchers have confirmed that approximately 45 minutes after the nicotine-containing liquid was released in an electronic cigarette and approximately 15 minutes after smoking a regular cigarette, peripheral systolic blood pressure significantly increases. In addition, the heart rate remains elevated for 45 minutes after smoking an electronic cigarette, whereas after smoking a regular cigarette, this frequency remains elevated for 30 minutes.

4.4. Oncological diseases.

From the studies of American scientists, it became known that the flavoring additives contained in electronic cigarettes are harmful to the respiratory system and health in general. However, unlike conventional cigarettes, the composition of vaping liquids is not regulated by law. In addition, the actual content of nicotine and other chemicals in vaping liquids does not always match what is indicated on the package. Elements formed during combustion and vaping can cause various oncological diseases. A review of scientific studies has also shown that the use of e-cigarettes can disrupt phagocytic function and cytokine response to m.Tuberculosis. Despite the presence of complaints from users, many of them consider the use of electronic cigarettes harmless. However, analog methods of smoking are also no less dangerous. For example, glycerin, which is the basis of liquids for evaporation, settles in the lungs and can lead to the formation of nitrosamines. As a result of the metabolism of these substances, methyldiazohydroxide and formaldehyde can be formed, which can methylate nitrogenous bases in the DNA chain. Studies on mice have shown that inhaling a dose of e-cigarette vapor, comparable to 10 years of smoking in humans, can lead to the formation of tumors in the lungs, bladder and heart.

4.5. Teeth and oral cavity.

Studies at the S.I. Georgievsky Medical Academy have shown that electronic cigarettes can negatively affect dental status, leading to an increased risk of caries and other periodontal diseases. Belgorod experts also revealed that smoking with the use of a steam cocktail contributes to the development of inflammatory diseases of the gums and bones, as well as the deposition of tartar. In general, smoking in any way has a negative effect on the condition of the oral cavity and teeth.

5. The role in the formation of dependence for society and people.

Electronic cigarettes have become popular among children and young people thanks to the marketing strategies of tobacco companies that present them as a harmless means to quit smoking.

Depending on the reasons that cause the desire to smoke, there are two types of dependence: psychological and physiological. Psychological dependence is associated with habits and an internal stereotype of behavior, its correction can be carried out with the help of psychological and pedagogical methods, as well as the development of motivation to quit smoking. Physiological dependence is associated with the metabolism in the body and manifests itself through a sense of pleasure from the effects of nicotine on the receptors and nicotine withdrawal when quitting smoking. Nicotine replacement therapy is one of the measures to combat physiological dependence.

Studies show that using e-cigarettes does not help to quit smoking. Moreover, in the USA and Poland there is a rapid increase in the current use of electronic cigarettes. Their prevalence among non-smoking youth in these countries has increased several times in three years. Trend data

indicate the presence of two groups of countries: in one, the prevalence of e–cigarette use is low, in others it is rapidly increasing. There is a serious debate about whether the increase in the use of e-cigarettes among non-smoking youth is a precursor to smoking. Available studies show that the use of e-cigarettes by minors who have never smoked at least doubles the likelihood that they will start smoking.

The study conducted on an anonymous survey of students from five European countries: Belarus, Lithuania, Slovakia, Poland and Russia has interesting results. In total, about 15 thousand students aged about 20 years were interviewed. According to the results of the study, most university students want to quit regular smoking, but users of electronic cigarettes do not feel such a desire.

The electronic cigarette is a tool that helps tobacco companies attract new customers. It is positioned as harmless, which removes the psychological barrier. In addition, natural physiological reactions such as cough, nausea and dizziness do not occur during the first use, since the smoke does not have such an unpleasant smell and contains flavorings. However, the use of an electronic cigarette can form a psychological dependence, since the same rituals and situations remain, the same expectations of a teenager that he looks more mature this way.

6. Conclusion.

From the analysis of the literature, it became clear that electronic means of delivering nicotine and nicotine-free vapors are actively spreading in the world and in our country. Tobacco companies promote them as harmless, even useful in order to quit smoking regular cigarettes, which can attract schoolchildren. But the first studies have shown that heating products contain a lot of toxic substances, including organic and inorganic compounds, metals, flavors. Some of them are contained in higher concentrations than in conventional cigarettes, which increases the likelihood of serious diseases such as heart disease, lung disease, as well as cancer. In addition, these drugs can worsen the condition of the oral cavity and contribute to the disease of teeth and gums. But tobacco companies continue to position them as harmless analogues of cigarettes, which makes e-cigarettes attractive to young people and may contribute to early dependence on them.

It is very important to research existing literature, including foreign literature, and find out the opinions of schoolchildren, students, parents and teachers on this topic. Due to the negative consequences of the use of electronic cigarettes, it is important to carry out preventive measures aimed at preventing dependence on smoking electronic cigarettes.

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DIET AS A FASHION FOR GIRLS

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We decided to touch upon the topic of diet, weight loss, as it has always been and will be relevant, especially among girls. But unfortunately, most girls make many mistakes that can lead to breakdowns, eating disorders. And to avoid this, we wrote an article that included a couple of recommendations on how to follow a diet correctly; mistakes that are made most often, their consequences and how to avoid them; also told a little more about the concept of diet, what it is, about its varieties; told what proper nutrition should be and what foods should be included in the human diet

Key words: Diet, proper nutrition, eating behaviour, breakdowns, weight loss.

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ДИЕТА КАК МОДА ДЛЯ ДЕВУШЕК

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Мы решили затронуть тему диеты, похудения, так как она всегда была и будет актуальна, особенно среди девушек. Но, к сожалению, большинство девушек совершает множество ошибок, которые могут привести к срывам, расстройству пищевого поведения. И чтобы этого избежать, мы написали статью, в которую включили пару рекомендаций, как же все-таки правильно соблюдать диету; ошибки, которые совершают чаще всего, их последствия и как их избежать; также немного подробнее рассказали о понятии диеты, что она из себя представляет, о ее разновидностях; рассказали каким должно быть правильное питание и какие продукты должны входить в рацион человека.

Ключевые слова: диета, правильное питание, пищевое поведение, срывы, похудение.

Diet is a set of precisely composed eating habits that have been made with the purpose of curing and preventing people with acute and chronic diseases.

Many people especially females misunderstand the definition of diet and basically start losing weight because of their complexes, which lead to serious health problems.

Most of people have the wrong idea of diet that either associates with losing weight or with some disease. Talking about losing weight a person tries to get rid of her overweight and shortens the amount of food consumed; when it comes to diseases, a person tries to eliminate products that may cause those health problems

Few people know that the very first diet practices had nothing in common with losing weight, but recovery of the human organism itself. Any elimination of products we consume may lead to serious consequences of our health and well-being.

Nowadays there are a lot of diets and food practices that do not have anything in common with reality.

There are several types of diets:

Therapeutic diet - is a set of eating habits, facilitating the prevention and treatment of diseases. In comparison with “healthy nutrition”, therapeutic diet assigns to a single person in terms of his health.

Esthetic diet - is a diet that people follow in terms of their own beliefs, moral values and wishes.

Some examples of esthetic diet:

1. Japanese diet
2. Buckwheat diet
3. Protein diet
4. Kremlin diet
5. Kefir diet

Principles of proper weight loss

The right diet is based on several principles:

- **Diversity of food consumption**. In order to lose weight, there is no need to eat only low-calorie and "tasteless" food. Products should be delicious, healthy and diverse.
- **Portioning of meals**. Daily calories consumption is needed to be fractured into three main mealtimes and two snacks. Breakfast should take 30% of daily consumption, lunch - 35%, dinner - 25% and two snacks - 10%. In this case organism won’t feel hunger.
- Most part of the food consumed should be made up of **natural products**, excluding artificial ingredients, sugar and others. At the same time, the diet should fit into the standards of calorie, protein, fat and carbohydrate amounts.

The right way to start your diet:

So, the proper way to start your diet requires following these principles:

First of all, it is mandatory to have breakfast. Usually those who do not have a morning meal, eat more during the day.

It is also important to have dinner. It is as important as breakfast. The only thing necessary to remember is better to exclude heavy, fatty and high salty products because they may cause negative digestive processes, discomfort, heaviness and bloating. Moreover, it is crucial to increase the amount of vegetables consumed during a day.

Mistakes that occur during losing weight:

- Usually people who try to lose weight apply too many practices that lead to stress and other problems. These are some common mistakes that occur when people try to lose weight:
- Extreme reduction of calorie intake. To lose weight, it is enough to reduce consumption by 10-15% only.
- Rejection from having breakfast or dinner.
- Inappropriate application of different diets, such as high-protein or low-carbohydrate diets.
- Full rejection from “unhealthy” things, which may lead to a failure of the diet.

Consequences of inappropriate diet.

According to the nutritionists, 1kg of weight loss per week is the safest and the most allowable during any diet. If you try to lose more, it may cause serious problems.

Here are the reasons why those practices are dangerous for health:

1. Decreased immunity
2. Failure of the reproductive system
3. Mood swings
4. Eating disorder
   - Bulimia
   - Fear of having anorexia
   - Orthorexia
   - Binge eating habits

After all of the above, we can draw conclusions.

1. Diet is a way to improve your health, but if you follow and apply the necessary diets correctly
2. To lose weight, you don't have to torment yourself and your body by starving and using mono diets, because all this will lead to great health problems
3. It is best to contact specialists: nutritionists, dieticians. They will choose and make the right weight loss plan.
4. And most importantly, you need to love yourself and not be complex, because you can solve all the problems if you have the power of will and patience

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УДК 613

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PROBLEM OF IRRATIONAL DIET OF STUDENTS

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The article shows the role of rational diet in the life of students. The analysis of the diet of students by questionnaire and survey method has been carried out.

It has showed that the diet of the respondents is irrational due to the violation of quantitative and qualitative characteristics. A monotonous diet is characterized by an insufficiency of vegetables, fruits, dairy products, meat, and an excess of fast food. Most of the respondents have dyspeptic disorders. At the same time, one third of the respondents have pathology of the digestive system. The results obtained are useful for solving the problem of organization of students' diet.

Keywords: rational diet, students, healthy diet.

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ПРОБЛЕМА НЕРАЦИОНАЛЬНОГО ПИТАНИЕ

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В статье показана роль рационального питания в жизни студентов. Проведен анализ рациона питания студентов анкетно-опросным методом.

Он показал, что питание обследуемых - нерациональное за счет нарушения количественной и качественной характеристики. Однообразный рацион, характеризуется недостаточностью в рационе овощей, фруктов, молочных продуктов, мяса, и избытком продуктов быстрого приготовления. Большинство из опрошенных имеют диспепсические расстройства. При этом треть респондентов имеют патологию со стороны органов пищеварения. Полученные результаты полезны для решения проблемы организации питания студентов.

Ключевые слова: рациональное питание, студенты, здоровое питание.

The problem of diet is one of the factors that establishes a person's connection with the environment. Food, unlike other environmental conditions, is a multicomponent factor that can change the function of organs and body systems , depending on the quantity and composition. Rational, balanced diet is necessary to maintain high intellectual and physical performance, normal functioning of organs and systems, to increase the body's resistance to a number of diseases, in addition, to increase the duration and quality of human life. Lack of time, ignorance of food culture, the speed of modern life lead to promiscuity in the choice of products, incorrect organization of diet. In some cases, these factors can lead to more serious consequences, such as diseases of the organs of the digestive tract.

One of the components of a healthy lifestyle is a rational diet. Rational diet is a person's diet that determines his or her physiological needs for energy value, useful nutrients (proteins, fats,

carbohydrates, vitamins, minerals, trace elements), guided by information about age, diseases, physical activity, nature of work, climate.

Spending energy on your activities and getting it from food, you need a balance to prevent excess energy reserves in the form of fat deposits or vice versa, switching to the consumption of internal reserves. Rational diet includes compliance with the diet. The optimal diet is four meals a day, when a person eats at intervals of 4-5 hours at the same time.

In total, there are three principles of rational diet. The first of them is energy balance, the energy value of the daily diet should correspond to the energy consumption of the body. On average, it amounts to 2000 kcal per day for mental work, and up to 4000 kcal per day for physical work.

The second principle is a balanced diet, according to which it is necessary to consume the exact ratio of proteins, fats and carbohydrates. Protein- 1 protein per 1 kg of weight, while one half of this amount should be vegetable origin, and the other is of animal origin. The volume of fat should be 15-30% of the caloric value. The optimal ratio is considered to be 3-7% of polyunsaturated fatty acids, 7-10% of caloric value due to saturated fatty acids and 10-15% - due to monounsaturated fatty acids. Carbohydrates should be 55-75% of the daily caloric value, 5-10% of them are allocated to simple carbohydrates, such as sugar, and the rest to complex carbohydrates.

The third principle is the diet: 3-4 meals a day are considered more suitable. Meals should be regular and equable, no later than 2-3 hours before bedtime.

Basic rules of rational diet

1) Accounting for the composition of food,

2) Sufficient water and nutrients consumption

3) Equality of calories in the daily diet and person's energy consumption

4) Adding dietary fiber to the diet

5) Varied menu

6) Dietary pattern.

Coming into a new social environment, a student adapts to it, feels the influence of numerous environmental factors against the background of a high academic load and lack of time. Often, a student puts diet in the background, showing inattention to the diet and dietary pattern. At the same time, there is an increase in the popularity of fast food. A dietary pattern is characterized by excessive consumption of products of animal origin and easily digestible carbohydrates that provide the effect of rapid saturation.

Up-to-date information on the diet of students allows us to observe the dynamics of risk factors for the occurrence and prevalence of diseases of the gastrointestinal tract in young people. This information will allow to take practical measures on the prevention of diseases and the maintenance of the health of future specialists.

Many students do not notice the results of improper diet for a long time, and after noticing them, they are in no hurry to eliminate health-related problems. If there is prolonged fatigue, impotence or depression, then more likely low-calorie food prevails in the diet and the body is unable to cope with it. Defending itself, it restricts vital activity for the sake of saving energy. Body is able to work in the correct regimen only with sufficient intake of fats, carbohydrates and proteins. If there is a lot of fatty, smoked and pickled food in the diet, then it displaces foods that can benefit the body. Such kind of diet leaves its unfavorable mark on human health –overweight, chronic diseases, migraines, skin problems. People should diversify the menu, add the following products to the diet: greens, fresh fruits and vegetables, fish and lean meats to eliminate the problems of improper diet.

The most common disease is gastritis. Gastritis is an inflammation of the gastric mucosa, leading to a violation of its function, especially secretory one. If a person has gastritis, the incoming food is poorly processed, which leads to a violation of the absorption of substances useful to the human body.

96 people were interviewed during the study on the topic "problem of irrational diet of students", 79% of them were girls, 21% of them were boys. 18% of all respondents try to comply with the diet, 82% do not comply with it. 10% of young people eat more than three times a day, 38% of students eat three times a day, 46% eat twice a day, and 6% - once a day. 79% of students have tea and sandwiches for breakfast, 8% of students do not have breakfast and only 13% of students eat hot food daily in the morning. A full three-course lunch is eated by 40% of students but only on weekends. 47% of respondents have their main meal at dinner, and after 9.00 pm. 53% of students consider the lack of money to be the main reason for their irregular diet, 47% of students associate malnutrition with a stressful academic load and lack of time. In terms of time, a meal takes, on average, 5-10 minutes for students, many of them (85%) are engaged in extraneous matters during meals, for example, reading or talking.

After analyzing the students' answers, it can be concluded that most students do not follow a diet, lead an unhealthy lifestyle and eat unhealthy food to a large extent, which leads to a slow development of the body, to various cardiovascular, intestinal and cancer diseases.

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ONCOLOGY PREVENTION

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Abstract: Oncology is an urgent problem of humanity. Every year the number of cancer cases is growing exponentially. Cancer prevention is a necessary measure that a person can take. Thanks to simple rules, the chance increases, if not to prevent the disease, then at least to start treatment in a timely manner without large losses, not to bring the situation to an extreme.

Keywords: oncology, prevention, bad habits, healthy lifestyle, research.

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ПРОФИЛАКТИКА РАКОВЫХ ЗАБОЛЕВАНИЙ

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Онкология - это насущная проблема человечества. С каждым годом число случаев рака растет в геометрической прогрессии. Профилактика рака - это необходимая мера, которую может предпринять человек. Благодаря простым правилам повышается шанс если не предотвратить заболевание, то хотя бы своевременно начать лечение без больших потерь, не доводить ситуацию до крайности.

Ключевые слова: онкология, профилактика, вредные привычки, здоровый образ жизни, исследование.

Relevance

The problem of the incidence of cancer is becoming more and more relevant in any society every year and occupies one of the leading places in the structure of the morbidity of the population. Cancer inspires fear in people and this is the biggest fear of people in the world. Malignant neoplasms are the second cause of mortality in the population [5].

The purpose of the study

The aim of the work is to consider cancer prevention at its various stages in order to understand the importance of cancer prevention as an important problem of humanity.

Materials and methods

The investigation is based on a review of medical literature, scientific articles related to cancer prevention in Russian and English. The search for literature and electronic sources was carried out in the electronic medical database PubMed, as well as in articles written by medical practitioners.

Results and discussion

Types of prevention are classified into primary prevention, secondary prevention and tertiary prevention. Consider each type of cancer prevention.

1. Primary prevention of oncology.

Primary prevention is measures for the prevention of oncological diseases, which consist, first of all, in the independent maintenance of people's own health at a high level. Primary preventive measures include measures aimed at eliminating factors that provoke the development of oncology:

1. balanced nutrition;
2. giving up bad habits;
3. protection against infectious diseases;
4. restriction of contact with harmful substances;
5. maintaining an active lifestyle;
6. UV protection;
7. compliance with the regime;
8. strengthening the nervous system.[2,3]

2. Secondary prevention of oncology.

Secondary prevention is the early detection of oncological diseases and diseases that may precede them. Thanks to secondary prevention measures, it is possible to identify a risk group among the population and form the necessary knowledge about the disease and ways to prevent it.

Secondary prevention measures:

1. possess information about oncological diseases;
2. systematically conduct self-diagnosis;
3. be examined by a doctor in a timely manner and follow his recommendations;
4. if suspicious symptoms appear, immediately seek advice.
5. preventive examination of the population in the form of a mandatory regular examination;
6. detailed study of the revealed pathologies in the conditions of medical examination;
7. accounting and close attention to people with a predisposition to oncology; promotion of a healthy lifestyle and the necessary knowledge about oncology.

Thanks to regular preventive examinations and medical examinations, oncological processes can be detected at an early stage until the moment when the patient begins to worry about the symptoms of the disease.

To do this, the necessary research is carried out:

1. Fluorography. Mandatory annual procedureassesses the condition of the lungs and mediastinum.

2. Mammographic examination. Women over 39 years oldare subject to it.

3. Annual blood test and consultation of a urologist for men over 40 years old. It is able to detect prostate cancer.

4. Annual examination by a gynecologist and taking a smear from the cervix for women.

5. Examination of the intestine for the presence of hidden blood. It helps to detect bowel cancer in the initial stages.

6. Blood test for cancer markers.

7. Computated tomography.

The risk group requiring particularly careful monitoring includes:

1. Workers in contact with harmful toxic substances;

2. Women of reproductive age;

3. Men over 40 years of age; people whose close relatives had cancer;

4. Individuals who have been treated for cancer in the past;

5. Patients with chronic diseases and those that activate the process of developing cancerous tumors.

3. Tertiary prevention.

Tertiary prevention includes detailed monitoring of people who have already suffered from malignant neoplasms. The main task is to prevent relapse and the appearance of metastases.

It includes:

1. Regular visits to the oncologist and delivery of the necessary tests.

2. Maintaining a healthy lifestyle and observing proper nutrition.

3. Compliance with the recommendations given by the attending physician.

4. Attentive attitude to health and prevention of infectious diseases.

5. Exclusion of contact with carcinogenic and mutagenic substances [1]

Conclusions

Cancer is the leading cause of death worldwide. Since there is currently no cure for cancer, the best strategy to fight cancer is early detection and prevention. Currently available methods are vaccinations against specific viruses (primary prevention), combined with screening (secondary prevention), the use of biomarkers and the appointment of adjuvant therapy (tertiary prevention). Modifiable lifestyle-related risk factors are also important for cancer prevention. It has been proven that vaccination is highly effective against targeted diseases leading to the development of cancer, especially if vaccination is carried out in the first years of life. Do not neglect the need for regular screening (for breast cancer, cervical cancer, etc.) and follow it to detect unusual changes or

abnormalities in the body. Thanks to discoveries in the field of targeted therapy, adjuvant treatment is becoming a reliable component of tertiary prevention to improve disease management. The discovery of biomarkers and subsequent targeted therapy led to the fact that personalized medicine has become a modern trend in the treatment of cancer [4].

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SCREENING MEDICINE AS MEDICINE OF THE FUTURE

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Medical screening can potentially improve the quality of life of the general population by detecting diseases at an early stage, when they are still reversible. Modern automation of diagnostics and integration into a common network make it possible to identify drug-resistant flora and other difficult-to-diagnose pathogens. In addition, statistical methods can be used to predict the emergence of new infectious agents and the development of known agents under the pressure of evolution and allows filtering patients and external factors to better identify the risk of developing certain diseases. The development of medical screening methods is important for the development of health services and clinical departments.

***Key words*:** medicine, screening method, chronic diseases, automated diagnostic complexes, centralized medical management systems, databases.

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СКРИНИНГОВАЯ МЕДИЦИНА КАК МЕДИЦИНА БУДУЩЕГО

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Медицинский скрининг потенциально может улучшить качество жизни населения в целом за счет выявления заболеваний на ранней стадии, когда они еще обратимы. Современная автоматизация диагностики и интеграция в общую сеть позволяют выявлять лекарственно-устойчивую флору и другие труднодиагностируемые возбудители. Кроме того, статистические методы могут быть использованы для прогнозирования появления новых инфекционных агентов и развития известных агентов под давлением эволюции и позволяют фильтровать пациентов и внешние факторы для лучшего выявления риска развития тех или иных заболеваний. Развитие методов медицинского скрининга имеет важное значение для развития служб здравоохранения и клинических отделений.

Ключевые слова: медицина, метод скрининга, хронические заболевания, автоматизированные диагностические комплексы, централизованные медицинские системы управления, базы данных.

Relevance

The relevance of articles discussing screening medicine lies in the fact that medication is an important tool for treating illnesses and promoting public health. Understanding the process of screening medicine ensures that healthcare providers and patients are informed about the medications they are using, providing them with confidence in their efficacy and safety. Additionally, keeping abreast of the latest developments in screening medicine can help healthcare providers and patients make informed decisions about the best treatment options available, ultimately leading to better patient outcomes. Therefore, articles discussing screening medicine are essentials too, for healthcare professionals, researchers, policymakers, and patients alike.

Purpose of the study

To prove that screening can ensure the longest possible preservation of a high level of patient health, to ensure a high quality of life and longevity.

Definition

Screening is a methodological approach used in medicine for mass examination of the population in order to identify a certain disease or factors contributing to the development of this disease.

The purpose of screening in the field of medicine is to use interdisciplinary specialized research involving volunteers.

The screening method itself makes it possible to reduce the severity of chronic and acute diseases, prevent the formation and expression of a resistant genetic pool in circulating anthroponotic infectious agents and improve the quality of life of the population.

It is actively used in medicine. Screening medicine gives the ability to detect diseases at the earliest stages of development, when pathological processes are still reversible and do not require the use of harsh methods: surgery, chemotherapy treatment, etc. And if modern automated diagnostic complexes integrated into a common network are involved in screening activities, then this makes it possible to identify drug-resistant flora, difficult-to-diagnose or highly pathogenic forms at an early stage of epidemiological dynamics and this will allow us to provide timely assistance.

An additional convenience of screening is that the data obtained in this way can be used to correlate with symmetric multifactorial pathogenesis, as well as with disguised etiological agents that catalyze the development of combined or multiform diseases. For each individual risk factor, it is possible to identify a probabilistic map of the emergence of new etiological agents using statistical research methods, as well as to predict the development of known infectious agents under the pressure of such evolutionary components as uncontrolled turnover of antibacterial chemotherapeutic drugs, bacteriophages, etc.

Having considered the general concept and principles of screening, you can proceed to a more in-depth study of this term.

Not only definitions of the term "screening" differ, but also different approaches to the definition of certain types of screening. This division is largely conditional and in the most general form characterizes the features of a specific screening program at the level of society, population groups or in relation to an individual.

Depending on the coverage of the population, there are population, selective and targeted screening.

Population screening involves a large-scale process in which significant groups of the population are invited to undergo screening. Examples of such screening are screening for tuberculosis using fluorography, conducted in a number of countries in the first decades after World War II. All children and adults were included in such screening.

Selective screening is carried out in certain population groups. Examples of such screening in a number of countries are national health screening programs to identify certain chronic noncommunicable diseases (CNIDS) and/or risk factors for their development. For example, in the UK, the NHS Health Check program provides a free check of general health every 5 years for people aged 40-74 years without stroke, heart disease, kidney history, diabetes mellitus (DM) in order to identify the risk / presence of coronary heart disease (CHD), DM, kidney disease, acute cerebrovascular accident; at the age of 65 and older — the presence of cognitive impairment. A CNID risk assessment is performed by a nurse or physician assistant in a general practitioner's office, pharmacy, shopping mall, library, or leisure center. A person over the age of 74 can undergo a risk assessment with their general practitioner or nurse if they have questions or concerns. In Australia, adults aged 45-74 are offered a similar screening to identify risk factors for developing CNID. In the presence of risk factors (smoking, lack of physical activity, poor nutrition, alcohol abuse; high cholesterol, high blood pressure, impaired glucose metabolism, overweight) the patient can undergo free medical examinations, which can be initiated both at the request of the patient and at the discretion of the doctor (but are voluntary). Many film screenings used in Russia are approved by the international community.

An example of not achieving goals is the statistics of deaths from breast cancer. Data from Sweden and other countries show that with regular screening for 6-11 years, patient survival increases. Mammography programs are widespread in many countries, but the Russian program does not meet the targets.

Targets for fluorography, where coverage should reach 75%, have also not been achieved. The reason is that people don't go to doctors.

The convenience of this method lies in the use of filtering patients by certain types of diseases, external factors, etc., established at the request of the doctor responsible for medical screening.

Conclusion

Consequently, further use of the screening medicine method is a priority for the development of health services and private clinical departments with full integration of databases of centralized medical management systems.

The Health Service pays special attention to screening. Screening examinations, which are carried out during the medical examination of the population in practice, characterize mass gynecological examinations and fluorographic examinations

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THE ROLE OF FOLK MEDICINE IN MODERN SOCIETY

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The article is devoted to researching the relevance of folk medicine in modern society. The overview on the history of the development of this method of treatment is provided, the statistics of the use of various methods of traditional medicine in the 21st century are revealed. A feature of this study is using of an anonymous survey within people of different ages and types of employment.

***Key words**:* traditional medicine, alternative medicine, herbal medicine, hirudotherapy, bloodletting, manual therapy.

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РОЛЬ НАРОДНОЙ МЕДИЦИНЫ В СОВРЕМЕННОМ ОБЩЕСТВЕ

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Данная статья повествует о том, насколько в современном мире альтернативная медицина шагнула вперед. Описана история развития этого способа лечения, выявлена статистика использования различных методов народной медицины в 21 веке. Особенностью данного исследования является применение опроса в виде анонимного анкетирования людей разных возрастов и типов занятости.

Ключевые слова: народная медицина, альтернативная медицина, фитотерапия, гирудотерапия, кровопускание, мануальная терапия.

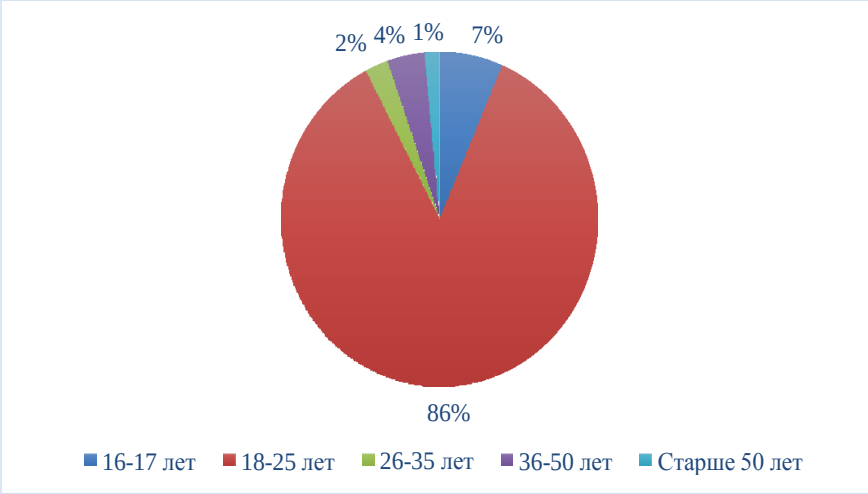
The significance of work

Nowadays there is big emphasis on traditional ways of treatment. Everyone turned to it for help. Even in the modern world alternative medicine is of significant importance. Nevertheless, the following fact must be taken into account: not all methods suggested by alternative medicine can be used for treatment of various diseases, moreover, there is the risk of harming a person when some of them are used. According to certain statistics, for example, in China in 2002 9854 people suffered from traditional medicine. Taking it into consideration, the aim of this study is to investigate how much Russian people are informed on the issues of alternative medicine. The main task lies in revealing the negative and positive aspects of people's ideas related to treatment of complex diseases in terms that are proposed by traditional medicine.

Data and search methods: our search was conducted and involved 135 students, major part of them were those at the Medical university. To obtain empirical data, we used a survey. For the processing of statistical data (as well as its collecting), the *Google Forms* program was used.

The age ratio of the respondents is shown in the diagram below, where the age of most respondents (85.5%) is in the range from 18 to 25 inclusively, the smaller part (1.5%) is over 50

years old. The percentage of the rest groups is: 6.5% - 16-17 years old, 3.8% - from 36 to 50 years old and 2.4% - from 26 to 35 years old, respectively.



Picture1. Age pattern of the respondents

The history of traditional medicine

Alternative medicine has always been in great demand among population. traditional medicine is a treatment using herbs, decoctions, tinctures, balms, as well as techniques such as acupuncture (needle therapy), bloodletting, hirudotherapy (hirudotherapy) and so on. That is the history of modern medicine originates from traditional medicine.

Russian traditional medicine underwent through active development. The first mentions are noted in «Russkaya Pravda». At that time healers were called «lechetsi». They used medicines based on wormwood, plantain, nettle, wild rosemary and other plants. A sweating house was paid significant attention since large portion of medical manipulations were conducted there, including delivering a child, nursing newborns, putting a bone into joint again, letting blood, doing massage, embrocating with drug ointments. Acupuncture (needle therapy) is one of the oldest methods of treatment and pain relief. It is a traditional Chinese medical practice based on the idea that blocking or disrupting the flow of the body's vital energy, or qi, can cause health problems. Acupuncturists insert narrow needles at specific points throughout the body to balance the body's energy, promote healing and relaxation.

Working method

Researchers do not completely realize how acupuncture might work, but some theories claim that acupuncture can stimulate the release of endorphins, the body's natural pain-relieving chemicals as well as it can affect the autonomic nervous system, and needle insertion can affect breathing, blood pressure, and heart rate.

Application

Acupuncture can be helpful for a variety of conditions, including:

• Anxiety

• Arthritis, which describes conditions associated with joint inflammation

• Long-lasting pain

• Depression

• Insomnia, a condition in which there are difficulties associated with sleep

• Migraines, which are severe headaches often accompanied by other symptoms

• Nausea

• Sinus congestion, or stuffy nose

• Stress

• Infertility, which describes difficulties with pregnancy

• Addiction

• Skin appearance

The benefits of traditional medicine for the body

The benefits of acupuncture for health can vary from person to person. It should be taken into account that several sessions of acupuncture ought to be provided before any developments are noticed.

Research on the benefits of acupuncture for health is still limited, however, there are some studies that have shown that acupuncture is beneficial for certain conditions.

Bdellotomy (leech therapy). After being in common use in old times this method had become obsolete by XX century. Nevertheless, it has been in usage again in XXI century. Leeches secrete the enzyme, which prevents haemolysis and reduces inflammatory reactions.

What substances are contained in leeches' discharge?

• Analgesic and anti-inflammatory action - antistasin, girustasin, gilantens, eglin C, leech tryptase inhibitor, complement C1 inhibitor, guamerin and piguamerin, carboxypeptidase inhibitor, bdellins and bellastazin.

• Increasing blood flow - acetylcholine, histamine-like molecules.

• Degradation of the extracellular matrix - hyaluronidase and collagenase.

• Antiplatelet effect - saratin, viburnum, apirase, decorsin.

• Anticoagulant effect - hirudin, gelin, factor Xa inhibitor, destabilase, new leech protein - 1, vitid and vitmanin.

• Antimicrobial effect - destabilase, chloromycetin, teromacin, teromizin and peptide B.

Benefits of this treatment:

A leech sticks with a suction cup to the skin of a warm-blooded animal to human skin. It sucks up a small piece of skin and cuts it. Then it injects saliva into the wound. The first spits contain enzymes that allow the leech to reach the microcapillaries. This first dose of enzymes removes from the diseased area some harmful compounds that have accumulated there due to impaired venous outflow.

Next, the leech injects painkillers and anesthetic agents into the wound. And it starts to eat. If it does not like something - for example, blood has become too thick again - the leech introduces additional bioactive compounds.

That is, the worm during the entire session "analyzes" the patient's blood. And depending on the results of the “analysis”, it introduces a different amount of enzymes into the wound. Therefore, its impact is strictly individual. At the end of feeding, the leech injects disinfectants into the wound and falls off.

It is important to understand that the leech is interested in the fact that the bitten animal does not get sick. It is evolutionarily unprofitable for it to harm those whom it dines with. Animals come to the watering hole regularly and feed the leech and its offsprings. It is no coincidence that this species of annelids lives only in clean fresh running water. Evolution has established mutually beneficial cooperation: a warm-blooded animal gives a few milliliters of blood to a leech, and in return it supplies it with useful bioactive compounds.

Bloodletting (another name is phlebotomy). Bloodletting is a method that is based on removing the right amount of blood from the body using punctures or incisions. Now this method is used to treat cardiovascular insufficiency, pneumonia, uremia.

Hijama causes the release of prostaglandins, an inflammatory product of cells responsible for conducting pain to stimuli the brain. When hijama is being done, prostaglandins are excreted in the blood and, at the same time, the patient's feeling of pain decreases. Most chemical painkillers work by blocking the production of prostaglandins to reduce pain transmission to the brain. The absence of collateral damage of hijama should be noted, while NSAID (ibuprofen, peroxides, diclofenac, etc.) and steroid derivatives of cortisone have side effects on the stomach and kidneys. This, in turn, can lead to kidney failure and a decrease in the excretion of metabolic products from the blood, a decrease in bone marrow activity and red blood cells production, cause nausea and a decrease in appetite.

4. Phytotherapy (phytotherapy) is a method of treatment using medicinal plants.

Advantages of this treatment

The advantage of modern herbal medicine is the low risk of side effects and relatively low cost . Most herbal medicines are well tolerated by patients, with fewer adverse effects than chemical-derived pharmaceuticals.

Disadvantages of this treatment

• impossibility to calculate the dose of the active substance

• a lot of plants are still unexplored

• the probabilityof missing the moment when the disease should be treated with pills

• no control at the state level

• a large number of specialists working without a license

5. Hydrotherapy - the use of procedures such as baths, washing, wrapping, wiping in order to treat or prevent diseases. Through this method of treatment are stimulated, relaxation occurs, blood circulation improves, immunity increases.

The advantages of this treatment:

First of all, there is necessity to talk about the temperature of water. It promotes muscle elasticity and relaxation. Therefore, the first benefit of hydrotherapy is that it helps the muscles to maintain a good working condition.

The second point is hydrostatic pressure. It gives a kind of small massage to the skin. As people move, the amount of pressure applied to different muscle structures will change, and they will be massaged in different ways. This effect helps reduce inflammation and heals skin lesions.

The third advantage is watertight when moving. This resistance allows people to work large muscle groups. When a move into the water is made, more effort than on land is required.

The fourth advantage is that healthcare professionals can help patients in a variety of ways. For example, they can offer resistance from below, above, behind, or in a specific area of the body - for greater effect.

In the pool, it is easier for professionals to move between patients and do their job. Moreover, if people look for relaxation, there are some hydrotherapy techniques where professionals hold patients below the knees and below the neck and move them rhythmically from side to side.

6. Clay therapy - the use of clays of different temperatures for the treatment of arthritis, osteochondrosis, psoriasis, seborrhea, diabetes and rickets.

In physiotherapy clay therapy has found its niche due to a number of properties:

• analgesic;

• anti-inflammatory;

• ability to influence metabolism;

• vasodilating;

• tonic;

• soothing.

Clay therapy can be carried out internally and externally. In addition, the procedure is cold, warm and hot. The internal use of clay is to prepare water and balls from clay, clay powder. During therapy, the blood is cleansed of toxins, the adsorbing properties of the product appear. External treatment is local and general. Local procedures include masks, applications and compresses; to the general ones - body wraps and baths.

7. Manual therapy - the use of therapist’s hands in musculoskeletal system deceases treatment.

The advantage of manual exposure is that it can be used to eliminate pain, treat acute and chronic diseases, and heal the entire body. After a course of such sessions, the quality of a person's life improves, he has an emotional upsurge. An experienced doctor will relax the muscles, stimulate blood and lymph flow, and improve metabolism. The main disadvantage of manual therapy is that it is a subtle science.

Negative effects of manual therapy

• pain syndrome intensification

• No improvement in condition

• Ribs fractures, vertebral processes

• Ruptures of ligaments, muscles and arteries

• Stroke

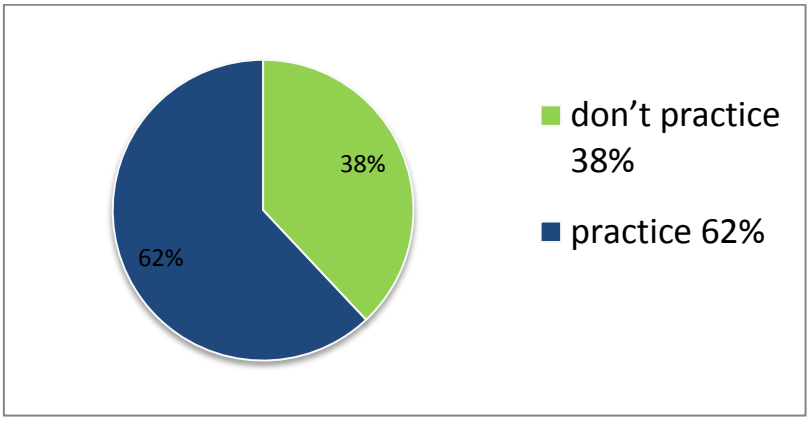
• Headaches

• Reduced vision

8. Incantation, whispering - the use of certain voice volume for hypnotic suggestions.

Results:

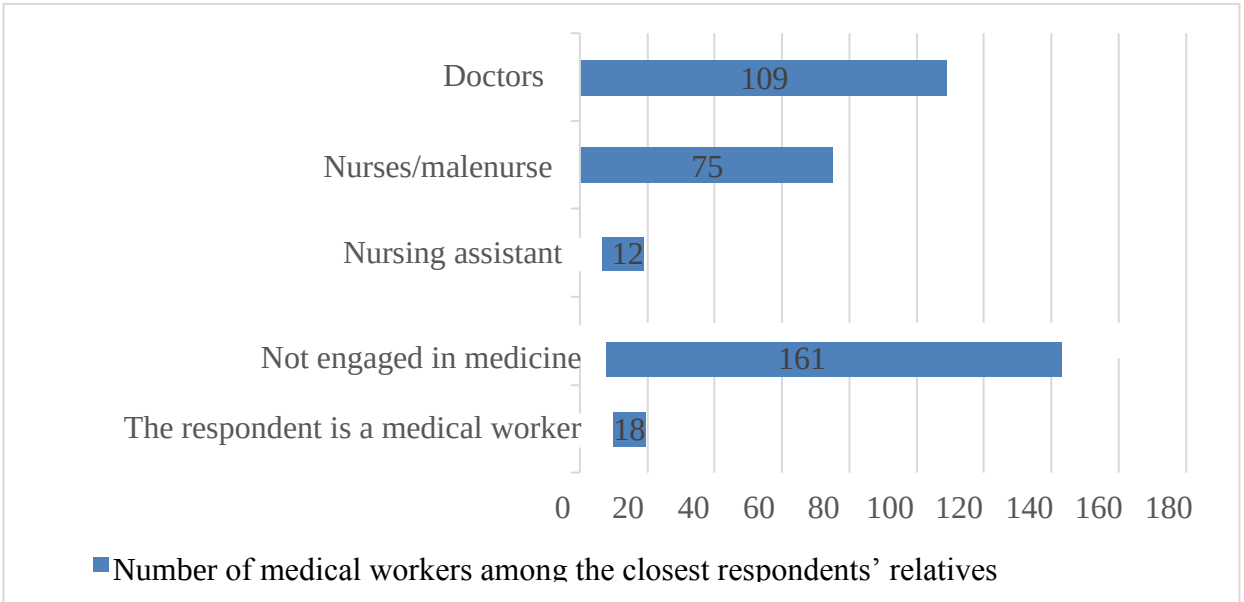
Majority of people domesticate their family traditions and pass them on from generation to generation. This is how the acquaintance of modern youth with traditional medicine takes place (pic. 2).



Picture 2. Number of respondents practicing traditional medicine (%).

The survey revealed the fact that most part of the respondents, anyway are engaged in medicine, prevalently through their closest relatives: 5.3% of the surveyed are medical workers , 32.2% of their relatives hold the position of doctors of various specializations, and 22.1% of people have representatives of nursing staff in their families [pic. 3].

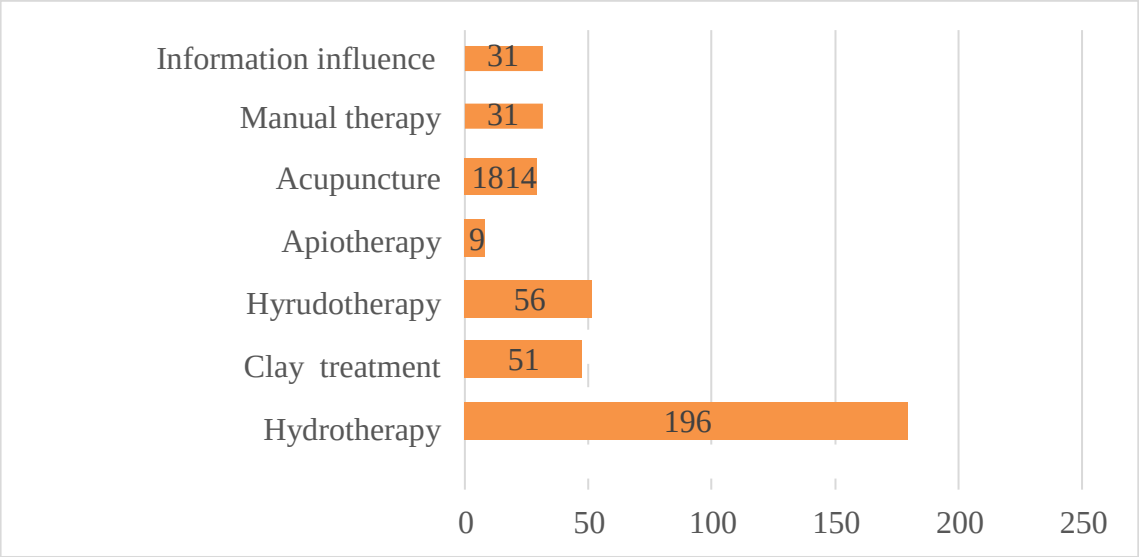
Our research yielded that a large number of respondents (88.5%) have relatives using traditional medicine, while only 61.7% of the respondents use alternative medicine methods themselves.



Picture 3. Number of medical workers among the closest respondents’ relatives (%)

The presented data suggests that in most cases (80%) people use herbs and teas for making their health problems solved, the second popular is healing clay (22,9%), the third popular way of treatment is hydrotherapy (20,8%) [pic. 4]. Building on our research data overwhelming majority of

people (77,3%) receive information about traditional medicine methods through their family, from generation to generation. This is true for the use of herbs and tinctures (80%). There is high necessity to note that these methods of treatment are suitable for a small range of diseases. Moreover, these techniques find their application not only for health improvement, but also for achieving beauty and youth.



Picture 4. The use of traditional medicine specific methods (%).

Figure shows that alternative medicine has been fairly popular up to the present day. Despite fast development in modern medicine and people's desire for everything new, our ancestors' experience and knowledge find acceptance in the 21st century. Alternative medicine is quite relevant in the modern world, but it is hard to claim about its full effectiveness.

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MODERN METHODS OF TREATMENT OF TRYPANOSOMIASIS

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In the modern world, a large number of people are at risk of trypanosomiasis. This article is aimed at studying the clinical manifestations of the latter, as well as modern methods of diagnosis, treatment and prevention.

***Key words*:** Pathogen, vector, bite, treatment, parasite, death.

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СОВРЕМЕННЫЕ МЕТОДЫ ЛЕЧЕНИЯ ТРИПАНОСОМОЗА

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В современном мире большое количество людей подвержено риску заражения трипаносомозом. Данная статья направлена на изучение клинических проявлений последнего, а также современных методов диагностики, лечения и профилактики.

***Ключевые слова*:** Возбудитель, переносчик, укус, лечение, паразит, смерть.

Relevance: The carriers of trypanosomiasis are the Tsetse fly and the kissing bug, which spread representatives of the genus Trypanosoma, causing the development of this disease in the human body. The parasites subsequently cause damage and dysfunction to vital systems and organs. Therefore, timely diagnosis of the disease, selection of appropriate treatment methods, and strengthening of vector control measures are important to reduce the number of infected individuals.

Purpose of the work

To study the influence of the dangerous trypanosome parasite and possible ways of treating the disease.

Materials and methods

The study of various sources of information, analysis of the information received, and conclusion.

Pathogenesis

Trypanosomiasis is transmitted to the body through the bite of vectors. This results in the formation of a painful, dark red infiltrate at the site of the bite, which is an accumulation of cellular elements in the tissue that are normally absent. After about a week, the infiltrate disappears, leaving behind a pigment spot. The parasite spreads through the lymphatic vessels and enters the regional lymph nodes, where it stays for a while. After 2-3 weeks, the trypanosome appears in the blood and spreads further into internal organs, including the brain and cerebrospinal fluid. The pathogen

multiplies within the affected cells and re-enters the bloodstream, causing autoinvasion. Local leukocyte infiltration accompanies the lesion site, and eosinophils release the toxic contents of their own granules during degranulation, producing toxins that affect nearby tissues. In most cases, necrosis develops, and symptoms correspond to the localization of the focus.

Clinic

Clinically, the disease has two stages of development: hemolytic and later, central nervous system damage. The first stage is characterized by skin lesions, rash, and swelling. Spots and ring-shaped rashes (ring-shaped erythema) appear on the trunk, accompanied by fever. The second stage is marked by the direct penetration of the parasite into the central nervous system, resulting in severe weakness, apathy, and drowsiness.

Diseases Caused by Trypanosoma and Their Symptoms

Due to the different pathogens and clinical manifestations, the following types of diseases are distinguished:

A) Gambian-type sleeping sickness, caused by the Trypanosoma brucei gambiense parasite. Symptoms usually appear within a few weeks or months after being bitten by an infected fly. Characteristic symptoms include fever, headache, muscle and joint pain, sleep and wakefulness disorders, lethargy, weakness, digestive disorders, enlarged lymph nodes, and swelling of the distal parts of the limbs. As the disease progresses, nervous system disorders, anxiety, seizures, memory loss, and decreased intellectual abilities can develop, eventually leading to coma. Sometimes the disease can be asymptomatic or mild, which complicates diagnosis.

B) Rhodesian-type sleeping sickness, caused by the Trypanosoma brucei rhodesiense parasite. It has a more malignant course, with a boil forming at the site of the bite and accompanied by fever and severe headache. Symptoms of Rhodesian-type sleeping sickness may include muscle pain and weakness, convulsions, nausea, vomiting, diarrhea, jaundice of the skin and eyes, bleeding of the gums, nose, intestines, and other organs, and loss of consciousness. Lack of treatment leads to death within a year, and the probability of a fatal outcome is much higher than with Gambian-type sleeping sickness.

C) Chagas disease, caused by the Trypanosoma cruzi parasite and transmitted by the kissing bug. The onset of the disease may be asymptomatic, but it is characterized by inflammation and dysfunction of the heart muscle, brain membranes, and gastrointestinal tract. At a late stage, patients may die from heart attacks or strokes. In childhood, meningoencephalitis often occurs, leading to death in children. Death can be sudden, and in less than half of the patients bitten by the bug, the first distinguishing feature is a skin lesion or purple swelling of the eyelids of one eye.

Diagnosis of trypanosomiasis

Diagnosis of trypanosomiasis is based on the patient's medical history, clinical presentation, and laboratory tests. Blood smear (during fever), lymph node puncture, cerebrospinal fluid, and bone marrow aspirates are commonly used for diagnosis. Trypanosomes can also be detected in the contents of the chancre. The following methods are used for diagnosis of trypanosomiasis:

1. Complement binding reaction (RSC)
2. Immunofluorescence reaction (RIF)
3. Thick blood smear examination during the acute phase
4. Microscopy of lymph node and bone marrow aspirates during the acute phase
5. Examination of cerebrospinal fluid (late phase)
6. Luminescence-serological determination of antibodies in the sera of infected people
7. Hemoculture
8. Biological method: laboratory rats are injected with the patient's blood and examined for the presence of trypanosomes after a couple of days. Rodents are most sensitive to Trypanosoma rhodesiense.

Treatment

T.cruzi (American trypanosomiasis, Chagas disease)		
Drugs of choice:	Benznidazole	5-7 mg / kg / s in 2 pr - 30-90 days
	Nifurtimox	8-10 mg / kg / s in 3-4 pr - 90-120 days
T.brucei gambiense (West African trypanosomiasis, sleeping sickness)		
Hemolytic stage		
Drugs of choice:	Pentamidine	4 mg/kg/s IM – 10 days
Alternative drugs:	Suramin	0.1-0.2 g (test dose) IV, then 1 g IV on days 1, 3, 7, 14, and 21
	Eflornithine	The dose is 0.4 g/kg/day IV in 4 injections, the course of treatment is 14 days.

T.brucei rhodesiense (East African trypanosomiasis, sleeping sickness)		
Hemolytic stage		
Drugs of choice:	Suramin	0.1-0.2 g (test dose) IV, then 1 g IV on days 1, 3, 7, 14, and 21
	Eflornithine	The dose is 0.4 g/kg/day IV in 4 injections, the course of treatment is 14 days.
Late stage with CNS involvement (T.b.gambiense or T.b.rhodesiense)		
Drugs of choice:	Melarsoprol	2-3.6 mg / kg / s / in - 3 days; after 1 week 3.6 mg/kg/s IV - 3 days; repeat after 10-21 days
	Eflornithine	Highly effective in infections caused by T.b.gambiense, and sometimes effective in infections caused by T.b.rhodesiense. The dose is 0.4 g/kg/day IV in 4 injections, the course of treatment is 14 days.

Tab. dosage of drugs

Treatment of trypanosomiasis can be effective in the early stages, leading to complete cure. However, the longer the stage of invasion lasts, the less effective the treatment will be.

Nitrofuran and tetracycline preparations are used in the earlier stages, while preparations based on arsenic compounds are used in the later stages. Such treatment is quite aggressive and is accompanied by a wide range of side effects, including dyspeptic and neurotoxic disorders, hematotoxicity, and skin manifestations:

1. Adverse reactions are more often manifested in adulthood, affecting 40-70% of patients.
2. Dyspeptic and dyspeptic disorders
3. Neurotoxicity - dizziness, headache, disorientation, general weakness, irritability, insomnia, peripheral polyneuropathy, muscle rigidity, tremor, convulsions, mental disorders

4. Hematotoxicity - leukopenia, erythrocytopenia, hemolytic anemia

5. Nephrotoxicity may occur in 25% of patients and can lead to azotemia, increased serum creatine levels, hematuria, proteinuria, and renal insufficiency.

6. These medications are contraindicated for use during pregnancy and lactation, in patients with hepatic and renal insufficiency, cardiovascular disorders, gastrointestinal disorders, and neurological disorders.

There are a number of contraindications:

1. It is not recommended to use these medicines during pregnancy and lactation
2. Patients with hepatic and renal insufficiency
3. Disorders of the cardiovascular system
4. Patients with gastrointestinal disorders
5. The presence of neurological disorders

Prevention:

Complete elimination of the disease is not possible, since there is a large reservoir of parasites in the Americas. Thus, the main goal of prevention is the fight against vectors and timely first aid to the sick.

The measures taken are reduced to the extermination of vectors of infection, up to the complete destruction of vegetation in their habitats. For timely detection of the disease, regular intermediate diagnostics of public health is carried out. To do this, blood smears are screened for vulnerable groups of the population, which include people living in remote rural areas and in urban slums. Measures are being taken to prevent and exclude human contact with vectors:

1. People's housing is equipped with mosquito nets, screens and traps for flies and bedbugs.
2. Public spaces are treated with systemic chemicals to kill harmful insects.
3. Working in the centers of parasite habitat, overalls and repellents are allocated – substances for repelling insects that feed on blood.
4. Intramuscular administration of Pentamidine is practiced.
5. Screening of donors and recipients of blood, organs, bone marrow and other cells is carried out.
6. Screening of newborns whose mothers were infected. This event provides an opportunity for timely diagnosis and treatment.

Sanitary and educational measures and timely assessment and improvement of diagnostic methods (rapid tests and serological methods) play an important role in increasing the detection and registration of cases of infection.

Discussion and Conclusions

Trypanosoma is an invasive, single-celled microorganism that can cause severe diseases.

Since complete eradication of trypanosomiasis is not possible and no vaccine is available, preventive measures should be strengthened. Therefore, to prevent the outbreak of dangerous diseases, efforts are made to eliminate cases of parasite transmission through blood transfusion and organ transplantation and to eliminate carriers of the pathogen. This disease spreads rapidly from person to person, so special attention is required. Sanitary and educational work should be carried out to increase awareness, particularly among vulnerable populations, including those living in remote rural areas and urban slums.

Epidemics can claim the lives of hundreds or even thousands of people. While prevention cannot guarantee complete protection, it can increase the chances of a healthy life.

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CAUSES OF TYPE II DIABETES MELLITUS

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The problem of type 2 diabetes is very common nowadays. The number of sick people is increasing rapidly every day. This article will help educate the public, provide an opportunity to start prevention in order to avoid the disease or problems in the future associated with diabetes mellitus.

Key words: type 2 diabetes, causes, nutrition, lifestyle.

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ПРИЧИНЫ ВОЗНИКНОВЕНИЯ САХАРНОГО ДИАБЕТА II ТИПА

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Проблема сахарного диабета 2 типа очень распространена в настоящее время. С каждым днем число больных стремительно увеличивается. Данная статья поможет просветить общественность, и в какой-то мере вовремя начать стремиться к предотвращению в будущем проблем, связанных с сахарным диабетом.

Ключевые слова: сахарный диабет 2 типа, причины, питание, образ жизни.

Type II diabetes mellitus- is a heterogeneous disease, which is characterized by a complex of metabolic disorders, but the characteristic features of this disease are insulin resistance and varying degrees of deficiency in the function of β-cells.This disease remains the most important problem of our time due to its prevalence. It is the cause of premature disability and death of patients. In preventing the onset of diabetes, not only personal awareness plays an important role, but also education of the population through useful preventive posters, brief methodological recommendations and promotion of a healthy lifestyle.

In 2021, 346,000 people with diabetes were registered. Adults get sick most often: out of 5 million Russians diagnosed with diabetes, only 0.9% are children.

Average age of onset of diabetes 57,8 years

Average duration of diabetes 8,5 years

DEFINITION OF DIABETES MELLITUS AND ITS CLASSIFICATION

«The term diabetes describes a group of metabolic disorders characterized and identified by the presence of hyperglycaemia in the absence of treatment. The heterogeneous aetio-pathology includes defects in insulin secretion, insulin action, or both, and disturbances of carbohydrate, fat and protein metabolism. » (WHO*)

CLASSIFICATION OF DM (WHO*, 1999)

Type 1 diabetes	β-cell destruction (mostly immunemediated) and absolute insulin deficiency; onset most common in childhood and early adulthood
Type 2 diabetes 1. Immunemediated 2. Idiopathic	Most common type, various degrees of β-cell dysfunction and insulin resistance; commonly associated with overweight and obesity
Other specific types	1. Genetic defects of beta -cell function 2. Genetic defects in insulin action 3. Diseases of the exocrine pancreas 4. Endocrinopathies 5. Drug- orchemical-induced 6. Infections 7. Uncommon forms of immune-mediated diabetes 8. Other genetic syndromes sometimes associated with diabetes
Post-transplant	Occurs during pregnancy

*-World Health Organization

IMPACT OF AGE ON DIABETES MELLITUS

Type 2 diabetes mellitus is mostly detected in patients 45 years of age or older. The risk of developing the disease increases with age. The body's glucose tolerance begins to decline, so after the age of 50, blood sugar levels increase by approximately 0.055 mmol/l every ten years.

An increase in blood sugar, which is measured 2 hours after eating, provokes the onset of diabetes.

Decreased glucose tolerance with advancing age has several causes:

1. Age-related decrease in the level of pancreatic insulin secretion.

2. Decreased sensitivity of body tissues to insulin with age.

3. The level of exposure to incretin hormones weakens with age.

In old age a decrease in muscle mass leads to a deterioration in glycemic control by reducing the uptake of glucose by the muscles, which leads to increased insulin secretion and insulin resistance.

The causes of type 2 diabetes in the elderly are concomitant diseases, such as: atherosclerosis, cardiovascular, pulmonary diseases. So, with atherosclerosis, blood vessels, the brain, heart, lower limbs and pancreas are affected. Smoking contributes to the rapid progression of the disease.

THE LINK OF LIFESTYLE AND TYPE 2 DIABETES

Type 2 diabetes is directly related to diet and lifestyle choices.

Dangerous factor - are drinks and foods high in added sugar. This may contribute to obesity, which is a risk factor for diabetes. When the body has a lot of sugar, it can become insulin resistant.

Therefore, it is recommended to exclude sugary drinks from the diet, such as sodas and juices, white bread, cookies, chips and pastries, ultra-pasteurized foods, and avoid fast food. Instead, choose whole foods that are low in added sugar and contain complex carbohydrates that break down slowly. These include whole grains and vegetables.

There are many different diets in the world. A popular diet is the long, carbohydrate-free fast. The relationship between insulin secretion and homeostasis is a simple one: insulin lowers blood glucose levels, and insulin secretion rises in response to the rise glucose. In a healthy person, food intake stimulates the secretion of insulin by pancreatic β-cells. During fasting and a long carbohydrate-free period, insulin secretion decreases.

There is a direct link between DM and being overweight. Visceral obesity can result from a sedentary lifestyle.

It leads to compression of the pancreas and liver, which causes impaired carbohydrate-lipid metabolism; increased insulin production and decreased insulin sensitivity.

THE ROLE OF HEREDITY IN THE DEVELOPMENT OF TYPE 2 DIABETES

A child may inherit a predisposition from parents, based on the established type of disease.

The following options for the occurrence of diabetic diseases are possible:

1. If one parent has a type 1 disease, then the percentage of infection in a child is from 5 to 10%.

2. If both parents have type 1 diabetes, the risk of heredity is 20-21%.

3. The second type of diabetes spreads among relatives much faster and easier. If at least one parent has this disease, then the child has an approximately 80% risk of receiving such a diagnosis.

When twins are born, in most cases they have similar diseases. So with DM2, if one of the children was diagnosed with a disease inherited from relatives, then his brother or sister will also be detected.

Most often, the parent is only a carrier of a genetic disease, while they themselves do not get sick.When such parents have a child, he has a high risk of being diagnosed with type 2 diabetes. A prerequisite for the formation of the disease is an improper lifestyle and diet, which must be avoided to delay the onset of the disease and prevent it from manifesting itself. The probability of a defect in the production of the hormone insulin due to genetic factors is 80% of other causes.

If this disease was diagnosed in two parents, then the probability of having a baby with the same pathology is 100%. However, diabetescanbeprevented. With a genetic predisposition, it is necessary to monitor the level of glucose in the child's blood. As a consequence it is possible to detect the onset of the disease in time and avoid its development. It is important to control the weight of children and their activity.

PSYCHOSOMATICS AS A FACTOR FOR THE DEVELOPMENT OF TYPE 2 DIABETES

As studies show, psychosocial factors play a significant role both in the occurrence of DM (mental trauma, prolonged nervous tension, constant stress) and in its course.

The data of Sakhnenko V.V., Kravchenko A.Y., Budnevsky A.V., Podvigin S.N. work «PSYCHOSOMATIC FEATURES OF THE SAHARITIC DEEASES OF TYPE 2» allowed us to draw the following conclusions:

1. One in three patients with type 2 diabetes had clinically significant anxiety and depressive disorders

2. The level of glycemia directly correlates with the level of depression and anxiety severity.

3. Affective disorders significantly reduce the quality of life of patients with diabetes mellitus.

The study involved 94 patients with type 2 diabetes (with an equal number of men and women), the average age was 52.2+7.6 years.

The results of the study showed that lower glycemic values corresponded to lower levels of depression and anxiety, while the highest levels corresponded to the highest ones. At the same time, the significance of anxiety statistically increased with the degree of its severity.

Also importantly, many people are prone to emotional overeating, which is a factor in the development of obesity, which in turn is a direct contributor to diabetes.

CONCLUSION:

Based on the results of the study of various sources, the following conclusion was formulated that diabetes mellitus type 2 type is a common disease.The main factors of its emergence and further development are: age (with age decreases the synthesis of insulin by the

pancreas, as well as tissue sensitivity to it); lifestyle (sedentary lifestyle, high consumption of sugars, obesity are directly related to the onset of diabetes); heredity (if at least one parent has this disease, then the risk of a child getting this diagnosis is about 80%); psychosomatic (various anxiety and depressive states contribute to the onset of diabetes)

Diabetes mellitus is a common disease, but knowing the factors contributing to type 2 diabetes, everyone can prevent it.

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УДК 81-2

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THE EFFECT OF TOOTHPASTE ON THE STRENGTH OF TEETH AND THEIR HEALTH

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This article reviews various methods of protecting teeth and choosing toothpastes that are safe for using

Key words: caries, tooth enamel, prevention, fluoride

Фазлыева М.И., Зиннурова А.А.

ВЛИЯНИЕ ЗУБНОЙ ПАСТЫ НА ПРОЧНОСТЬ ЗУБОВ И ИХ ЗДОРОВЬЕ

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Статья посвящена защите зубов и выбору зубных паст, не причиняющих им вред.

Ключевые слова: кариес, зубная эмаль, профилактика, фтор.

Health is the main value given to a person. There are many external indicators that can be used to determine the overall level of human health. I was interested in the question: how does the state of teeth affect health.

The purpose of the study is to find out how proper dental hygiene affects human health.

The aims

1. To study the literature on this issue
2. To find out the composition of various toothpastes
3. To conduct a survey
4. To make an experiment to determine the effect of toothpaste on enamel.

The subject of the study is the condition of the teeth and their proper hygiene

The object of research is toothpastes and human teeth.

Methods of the study

1. Theoretical (literature analysis)
2. Empirical (observation, comparison, experiment)

Hypothesis of the study Is it possible to keep your teeth healthy if you follow all the necessary rules of hygiene and nutrition.

Structure and composition of teeth. **The influence of various factors on their health**

A tooth is a formation consisting of hard tissues (dentin, enamel, cement) designed for biting and chewing food. Human teeth are divided into the following types:

1. Incisors (central and lateral)

2. Fangs

3. Small indigenous, or premolars

4. Large molars, or molars

As a result, we get the total number of teeth of a healthy person – 32 pieces.

Teeth are derivatives of the oral mucosa. Enamel develops from the epithelium of the mucous membrane, and pulp, dentin, cement, periodontium are formed under the epithelium. In order to maintain dental health, it is necessary to observe a balanced diet. The food taken should provide the necessary amount of calories, which depends on age, type of activity. The biological value of food is determined by the content of substances necessary for the body in optimal quantitative ratios. The food should contain: proteins, fats, carbohydrates, mineral components, trace elements, vitamins.

Oral hygiene. Hygiene products

Oral hygiene plays an important role in the prevention of dental caries and diseases of the oral mucosa. The unsatisfactory condition of the oral cavity depends not so much on regular care as on the ability to brush your teeth properly. To clean teeth, use brushes, pastes. Powders, rinsing solutions, toothpicks, dental floss. Toothbrushes – for removing food residues and soft dental deposits from all surfaces and from the interdental spaces. Toothpicks- to remove food residues from the interdental spaces. Toothpastes are the most common oral hygiene products. Their compositions include the following main ingredients: 1. Abrasives 2. SURFACTANTS 3. Various additives (perfumes, medicinal substances) Solutions for rinsing - liquid oral hygiene.

Chapter 3. Types of toothpastes, their effect on teeth

All toothpastes can be divided into 3 groups: 1. Hygienic- refresh the oral cavity. 2. Therapeutic – prescribed by a dentist during the period of the disease. 3. Therapeutic and preventive - in order to prevent diseases. Today, all pastes of the therapeutic and prophylactic category are divided into 2 categories: 1. Combined - include two or more therapeutic and prophylactic ingredients to solve one specific task. 2. Complex – includes several components to solve a separate problem (strengthening of enamel).

When choosing a toothpaste, it is better to consult a dentist, since many of them are not intended for permanent use. Everyone should know how to choose the right toothpaste, what to pay attention to, what to give preference to. For this reason, everyone should know how to choose a toothpaste and what components should not be in its composition: 1. Lauryl sulfate is a foaming agent. During chemical transformations, it converts oxides and nitrates, they settle in the human body and cause allergies (burning, itching)

2. Propylene glycol - promotes the destruction of the membrane and cellular proteins.

3. Triclosan is an antibiotic

4. Paraben- preservative

5. Polyphosphate is a water softener and reaction stabilizers.

6. Fluoride is necessary for tooth enamel. In case of increased concentration, fluorosis may develop.

The practical part

Experiment "The effect of toothpaste and acids on tooth enamel" To study the effect of toothpaste and acids on tooth enamel, I decided to conduct an experiment. After learning that eggshells, like tooth enamel, consist of calcium, I decided to make an egg a model of a tooth. To conduct the experiment, I used an egg and toothpastes from «Lesnoy Balsam», «Colgate», «Lacolute «and a 9% vinegar solution. I took an egg, put toothpaste on one side of the shell. She dipped the acid into the solution and began to observe. As a result of the experiment, I noticed that the shell became soft on the untreated side of the paste, and the side on which the toothpaste was applied became thinner, but remained firm to the touch. I summarized the results of the experiment and drew conclusions: 1. Acid destroys tooth enamel. 2. Toothpaste strengthens tooth enamel. Most of all, the shell has been preserved and remained protected, on which the paste of the company "Lakolute" was applied, thus, it can be concluded that this brand of paste is safe for teeth.

table 1

shell strength	2 hours	6 hours	10 hours
processed part	no change	no change	it has become thinner, but firm to the touch
unprocessed part	no change	the shell has become softer	the shell has become very soft

Conclusion

In conclusion, I came to the conclusion that misconceptions about oral care often cause problems: from bad breath to serious diseases. Having examined the state of dental health and general care for them, we can confidently conclude that it is necessary and important in order to prevent diseases of the oral cavity and teeth. Every person needs to take care of the preservation of teeth. Dental care is not only of preventive importance, but also the reduction of diseases of the whole body. Based on the above, we can draw conclusions: proper oral care not only helps to preserve the integrity of the teeth, but also prevents many diseases of the internal organs.

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MORPHO-FUNCTIONAL CHARACTERISTICS OF LEYDIG CELLS AGAINST THE BACKGROUND OF ORAL ADMINISTRATION OF TITANIUM DIOXIDE NANOPARTICLES OF RUTILE MODIFICATION

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The effect of titanium dioxide nanoparticles upon their oral administration on the morphofunctional state of Leydig cells has been studied. The testicles of rats were studied after oral administration of a nanodisperse form of TiO2. Aggregation of nanoparticles was prevented by treating a suspension of nanodispersed TiO2 in an ultrasonic bath. The control group rats were orally injected with distilled water in the same volume. Significant changes in the interstitial tissue of the testes were revealed when exposed to LF TiO2. Thus, the detected changes in the testes during oral administration of TiO2 nanoparticles indicate their negative impact on the male reproductive system.

***Key words*:** testis, Leydig cells, nanoparticles, titanium dioxide, reproductive system.

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МОРФО-ФУНКЦИОНАЛЬНАЯ ХАРАКТЕРИСТИКА КЛЕТОК ЛЕЙДИГА НА ФОНЕ ПЕРОРАЛЬНОГО ВВЕДЕНИЯ НАНОЧАСТИЦ ДИОКСИДА ТИТАНА РУТИЛЬНОЙ МОДИФИКАЦИИ

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Изучено влияние наночастиц диоксида титана при их пероральном введении на морфофункциональное состояние клеток Лейдига. Проведено исследование семенников крыс после перорального введения нанодисперсной формы TiO_2. Агрегацию наночастиц предотвращали обработкой суспензии нанодисперсного TiO_2 в ультразвуковой ванне. Крысам контрольной группы перорально вводили дистиллированною воду в том же объеме. Выявлены существенные изменения интерстициальной ткани семенников при воздействии НЧ TiO_2. Таким образом, обнаруженные изменения семенников при пероральном введении наночастиц TiO_2 свидетельствуют об их негативном воздействии на мужскую репродуктивную систему.

Ключевые слова: семенник, клетки Лейдига, наночастицы, диоксид титана, репродуктивная система.

Relevance

The use of nanoparticles (NPS) of titanium dioxide (TiO2) has been steadily growing over the past decade, and the annual production volume in the world has exceeded 5 million tons since 2008 [13], at the same time, concerns about the possible toxic effects of TiO2 on human health have been growing [11]. Titanium dioxide is presented in the form of three crystalline forms: rutile (tetragonal), anatase (tetragonal) and brookite (orthorhombic) [14]. Rutile is a widespread and

natural form of titanium dioxide used in the food (food additive-dye E171), construction, cosmetic and medical industries [15, 17].

A number of studies on mice and rats have demonstrated that reproductive organs are very sensitive to nanoparticles. TiO2 NPS with a size of ≤100 nm are able to easily overcome the blood-brain barrier and accumulate in the testes [5,10], which leads to a decrease in the number and motility of spermatozoa, an increase in morphological abnormalities of spermatozoa and a noticeable decrease in the level of testosterone secreted by interstitial endocrinocytes (granulocytes, Leydig cells), due to which normal spermatogenesis develops [4, 7, 8, 12, 16].

The purpose of the study

To study the analysis of morpho-functional changes of Leydig cells in the testes of white rats under oral exposure to titanium dioxide of rutile modification.

Materials and methods of research

The experiment was carried out on sexually mature white laboratory rats of the reproductive period of the Wistar line weighing 170-210 g in a total of 18 males. The animals were divided into three groups. The control group (n=6) received orally distilled water. Rats of two experimental groups "D-14" (n=60) and "D-30" (n=6) were orally injected with titanium dioxide of the rutile form at a dose of 10 mg/kg of animal weight. Males were removed from the experiment by decapitation under ether anesthesia in compliance with the basic requirements for euthanasia set out in Appendix No. 4 to the "Rules for carrying out work using experimental animals" on the 14th and 30th days. Experimental animals were kept in standard vivarium conditions with free access to water and food in accordance with the "Guidelines for the maintenance of laboratory animals in vivariums of research institutes and educational institutions."

Titanium dioxide dispersion (rutile form, 40-60 nm) was obtained by diluting TiO2 powder in distilled water. A suspension of nanodispersed TiO2 was treated in an ultrasonic bath for preventing.

The testes of rats were the material of histological examination. Tissue samples of the seminal glands were fixed in a 10% solution of neutral formalin. After washing in running water, they were dehydrated in a series of alcohols of increasing concentration and poured into paraffin according to the generally accepted scheme. Standard sections with a thickness of about 5-6 mm were prepared on the LEICA RM 2145 microtome (LEICA, Germany), then staining with hematoxylin and eosin was performed.

Morphological studies of Leydig cells were carried out using a digital scanning microscope Flash 3DHISTECH PANNORAMIC 250 (3DHISTECH, Hungary) and a licensed application package Slide Viewer (Hungary).

Morphometric analysis was performed by measuring the number of CLS in one interstitial site. The number of large and medium-sized CLS related to active steroid-producing cells, small-sized CLS representing inactive with respect to steroidogenesis, being involuting and immature forms of interstitial endocrinocytes were identified. The Leydig cell activity index was calculated as the ratio of the total number of active cells to inactive cells.

The obtained data were processed statistically using the Statistica 10.0 application software package (Stasoft, Inc.), Microsoft Excel. All quantitative data were presented in the form: average ± standard error of the average value. The comparison of the mean values in the control and experimental samples was carried out using a nonparametric comparison criterion for independent samples (Student's t-test), the changes were considered statistically significant at $p<0.05$.

Results and discussion

Our morphological study in the control group revealed the overall picture of endocrinocytes. Leydig cells of various morphofunctional types were located in connective loose interstitial tissue around blood and lymph vessels. According to their structure, Leydig cells had a fairly large and rounded shape with a characteristic light acidophilic cytoplasm and clearly defined rounded-oval nuclei with 2-3 nucleoli.

Overview microscopy of histological preparations showed that the effect of titanium dioxide at a dose of 10 mcg/kg on the testes of male laboratory rats in two experimental groups "D-14" and "D-30" led to some changes in endocrinocytes. In degraded interstitial tissue, Leydig cells were elongated and rounded cells. They are usually located singly.

Morphometric analysis of interstitial granulocytes showed that the average number of CL in the two experimental groups "D-14" (10.21±0.40) and "D-30" (12.14±1.08) decreased ($P<0.05$) compared with the control group "K-1" (19.35±0.56), while the density of CL remained unchanged. There was a decrease in the average number of active cells in the experimental groups "D-14" (23,40±5,16; 58,00±2,77) and "D-30" (3,00±7,94; 54,38±3,51) in comparison with the control group "K-1" (38,75±8,23; 71,00±6,62). The average number of inactive cells in the experimental groups "D-14" (18.60±3.56) and "D-30" (26.00±4.10) increased ($P<0.05$) compared with the control group "K-1" (8.13±2.61) (Table 1).

There was a decrease in the index of cell activity in the experimental groups "D-14" (5.39±1.38*) and "D-30" (2.85±6.67) compared with the control group "K-1" (33.99±11.91), due to the predominance of young inactive cells over more mature ones (table 1).

Table 1

Morphometric indicators of interstitial Leydig cells of rats of control and experimental groups of animals

Indicators	Control	D- 14	D-30
Number of cells in one site(cu)	19,35±0,56	10,21±0,40*	12,14±1,08*
Active large cells (CU)	38,75±8,23	23,40±5,16*	3,00±7,94*
Active medium cells (CU)	71,00±6,62	58,00±2,77*	54,38±3,51*
Inactive small cells (CU)	8,13±2,61	18,60±3,56*	26,00±4,10*
Activity index of cells (CU)	33,99±11,91	5,39±1,38*	2,85±6,67*

Note: *- statistically significant differences compared to the control group of animals ($p<0.05$)

Conclusion

Thus, the results of our studies showed a decrease in the average number of CL in the testes of rats of the experimental groups in comparison with animals of the control group. The possible cause of the detected negative effect was an increase in the processes of cell apoptosis due to the 14 and 30-day exposure of titanium dioxide to the animal body, which is confirmed by the information [1 ,2, 3, 6, 9].

The decrease in the activity index of CL in the testes of laboratory rats may have occurred due to a decrease in the number of hormonally active CL of medium and large size, producing testosterone necessary for the regulation of normal spermatogenesis, as well as against the background of an increase in the number of involuting, hormonally inactive CL with respect to steroidogenesis. The detected effects can cause androgen deficiency in the body of animals, and consequently lead to degenerative changes in the testicles of rats of experimental groups of animals.

According to our research the cause of dysfunction of the male reproductive system of titanium dioxide on the morphofunctional characteristics of Leydig cells is a negative effect.

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ORGAN AND TISSUE TRANSPLANTATION

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The article reveals the problem of Russian legislation in the field of health care transplantation of human organs and tissues. The concept of "transplantation" is considered from the standpoint of religion, medicine and jurisprudence; types of transplantation have been studied.

Key words: transplantation, donor, recipient, right to health care, right to medical care, human organs and tissues.

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ТРАНСПЛАНТАЦИЯ ОРГАНОВ И ТКАНЕЙ

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В данной статье раскрыта проблема российского здравоохранения в области трансплантации органов и тканей человека. Рассмотрено понятие «трансплантация» с позиции медицины, юриспруденции и религии; изучены виды трансплантации.

Ключевые слова: право на охрану здоровья, трансплантация, донор, реципиент, право на медицинскую помощь, органы и ткани человека.

Transplantology became a field of medicine in the late 20th and early 21st centuries. It has concentrated the latest achievements in anesthesiology, surgery, resuscitation, pharmacology, immunology and other biomedical sciences. This is an area of high biomedical technologies used in cases of pathological changes in human organs and tissues, which will inevitably lead to the death of the patient. The method of treating seriously ill patients of great social importance, such as organ transplantation, because it allows not only to prolong life, but also to ensure its higher quality level.

1. Transplantology and its types

Transplantology is a branch of medicine and biology that studies the problems of transplantation, and also develops methods for preserving organs and tissues, creating and using artificial organs.

In terms of terminology, the concept of "transplantation" means the complete process of removing an organ or tissue from one person and implanting that organ or tissue in another person, including all procedures for preparation, preservation and storage.

Organ and tissue transplantation is of the following types:

1. Autotransplantation, or autologous transplantation, is a method when the transplant recipient is a donor for himself. For example, autotransplantation of skin from intact areas of the body to burned areas in severe burns is widespread.

2. Allotransplantation, or homotransplantation - transplantation of organs and tissues from one individual genetically and immunologically another individual of the same biological species.

3. Heterotransplantation - transplantation of an organ or tissues from an individual of one species to an individual of another biological species. With this type of transplantation, an animal with tissues and organs similar in structure can become a donor for a person.

4. Interspecific transplantation or xenotransplantation is the transplantation of tissues, organs or cellular organelles from the organism of one biological species into the organism of another biological species.

Transplantation can also be heterotopic and orthotopic. Heterotopic transplantation is a transplant in which a tissue or organ is placed in an unusual place. Orthotopic transplantation is a transplant in which a tissue or organ is placed in the place of an identically removed or missing organ or tissue.

In 2014, 1425 organ transplants were performed, or 9.4 per 1 million population (in 2015 - 1507, or 9.2 per 1 million population). In 2016. However, every year the need for donor organs and tissues. Russia is one of the last places in the world in terms of the number of operations.

2. Transplantology from the point of view of religion

The problems of transplantation and transplantology are of concern to various institutions of society. If the processes of transplantation of organs and tissues are considered from the standpoint of religion, then conflicting information about transplantation is being disseminated in the Orthodox environment. The Church encourages the voluntary desire of a person to sacrifice a part of his body to save the life of his neighbor. To save people who need organ transplants, the state authorities should not only create an appropriate medical infrastructure, but also carry out information and explanatory work that will be aimed at increasing the number of potential donors.

3. Transplantation from the point of view of jurisprudence

In the interests of our study, the concept of transplantation must also be studied from the point of view of jurisprudence.

Afanasyeva E.G. considers transplantation as a medical operation to replace the diseased part of the human body with a healthy part taken from the same or from another organism.

V.P. Salnikov is rightfully considered one of the best Doctors of Law. He believes that transplantology is a highly effective type of surgical intervention aimed at transplanting organs or tissues from a donor to a recipient.

In accordance with the Federal Law of the Russian Federation of December 22, 1992 No. 4180-1 “On transplantation of human organs and (or) tissues” (as amended on November 29, 2007

No. 279-FZ), transplantation of human organs and tissues is a means of saving lives and restoring the health of citizens. It must be carried out on the basis of compliance with the legislation of the Russian Federation and human rights in strict accordance with the humane principles proclaimed by the international community. At the same time, the interests of man must prevail over the interests of society or science.

The objects of transplantation are both human organs: lung, heart, liver, kidney, pancreas, spleen, endocrine glands, intestines and its fragments, and human tissues: bone marrow, trachea, eyeball, upper and lower extremities and their fragments. This list does not include organs, their parts and tissues related to human reproduction (eggs, sperm, ovaries or embryos), as well as blood and its components.

In total, the law provides for two types of transplantation: either from a living donor or from a corpse. Only a capable citizen who has reached the age of 18 can be a donor, and a citizen aged 18 to 60 can be a blood donor. Transplantation of organs or tissues from a living donor is allowed only with his personal consent. Removal of organs and (or) tissues from a living donor is permissible provided that, according to the conclusion of a consultation of medical specialists, significant harm will not be caused to his health.

Medical practice in most cases prefers to harvest organs or tissues from a corpse rather than from a living donor.

The current legal norms provide for the following legal conditions for the removal and transplantation of organs or tissues from a corpse:

1) the death or death of the donor must be established in a certain order; 2) the mandatory presence of the permission of the chief physician for the removal of an organ and tissue from a corpse;

3) the will of the parties to conduct these operations must also be taken into account.

Medical conditions include the following:

1) availability of confirmation of the medical validity of these operations to save the life or improve the health of the recipient (there must be a sufficiently high probability of their success);

2) suitability of the donor for health reasons;

3) compatibility of the donor and recipient.

The general law containing the rules on the attitude towards the human body after death, in particular when removing organs and (or) tissues, is the Federal Law of January 12, 1996 No. 8-ФЗ “On Burial and Funeral Business”. Currently, the legislation of the Russian Federation has a so-called presumption of consent to the removal of organs and (or) tissues - the removal of organs and

(or) tissues from a corpse is not allowed if the deceased himself, his relatives or legal representative clearly stated their disagreement with the removal of organs and/or fabrics. This situation raises both serious moral concerns and leads to legal problems. Accordingly, actions for a worthy attitude towards the body of the deceased must be carried out in accordance with his will, and in case of his absence, with the will of the following persons: his spouse, close relatives (parents, adopted children, adoptive parents, children, relatives brothers and sisters, grandfathers, grandmothers), or legal representatives of the deceased, and in their absence, other persons who have assumed the obligation to carry out the burial of the deceased.

Thus, the current level of development of clinical transplantation is directly dependent on public tolerance towards the concept of brain death.

We believe that a federal program for the development of organ donation and transplantation should be organized, with operational communication and delivery of organs to the recipient, with a powerful system of rehabilitation, monitoring and analysis of results. There is also a need for training programs for medical students, since there are no courses in transplantology in medical schools. All doctors study either on their own, from books, or abroad. Also, this problem should be widely discussed by the media with the involvement of representatives of all sectors of society, with the formation of a positive public attitude towards posthumous donation. State, religious and medical institutions should not only promote empathy for those who are in a situation of dependence on the donation of a vital organ, but also build confidence in the organ transplant process. It is necessary to radically change the attitude of society to the issues of transplantation. The main thing is that the relatives of the dead should be able to realize that a dead person does not need organs as such, and thanks to transplantation, tragedies can be prevented in many families and give life to people who seem doomed to death.

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УДК 616.831

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INTRANASAL USE OF INSULINE FOR CEREBRAL ISCHEMIA

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Intranasal use of insulin for cerebral ischemia is a promising treatment option. Studies have shown that insulin injected through the nasal passages can improve cognitive function, reduce infarct volume and improve ischemic tissue regeneration.

Key words: insuline, cerebral ischemia, neurodegenerative diseases, central nervous system.

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ИНТРАНАЗАЛЬНОЕ ПРИМЕНЕНИЕ ИНСУЛИНА ПРИ ИШЕМИИ ГОЛОВНОГО МОЗГА

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Интраназальное применение инсулина при ишемии головного мозга является многообещающим вариантом лечения. Исследования показали, что инсулин, вводимый через носовые ходы, может улучшить когнитивные функции, уменьшить объем инфаркта и улучшить регенерацию ишемизированных тканей.

Ключевые слова: инсулин, ишемиЯ головного мозга, нейродегенеративные заболевания, центральная нервная система.

Relevance

Stroke is one of the leading causes of disability and mortality in the world today. The methods of stroke treatment that we have at the moment have significant limitations and the neuroprotectants currently used are ineffective. One of the most promising neuroprotective treatments for diseases caused by brain pathologies is insulin, but the effects of intranasal insulin are virtually unexplored. One of the mechanisms of neurodegenerative diseases may be the resistance of the central nervous system to insulin.

Purpose: to study the possibility of intranasal use of insulin for cerebral ischemia.

Materials and methods

In our article we used a theoretical research method. Namely, we applied the following types: analysis, synthesis, comparison, ranking, concretization, generalization, etc.

Results and discussion

The intranasal route of administration deserves special attention because it allows insulin to be delivered directly to the brain bypassing the GEB. Experimental methods note that intranasally administered insulin to rats significantly reduces the number of neurons that died in brain lesions.

Concentrations of insulin and insulin receptors in the brain are independent of peripheral insulin levels

In the first example we will look at an experiment showing that insulin in the central nervous system plays a role that is unrelated to glucose metabolism in the rest of the body. The experiment investigated hypoinsulinemia (rats given streptozotocin) in relation to changes in insulin content and receptors in the brain. With intravenous streptozotocin administration (100mg/mcg) the rats became diabetic within 24 hours and began to die after 36 hours. In animals that survived for 48 hours brain insulin levels did not differ from those of control healthy mice.

When the dose of streptozotocin was decreased (65mg/mc) the survival time increased. After one week of streptozotocin use the rats were put to death. The insulin content in the pancreas of the study group of animals was reduced to 5% of normal, but the insulin concentration in the brain was identical to the control and even higher (the difference was not statistically significant because of the variability between animals) (Fig. 1).

The other group was killed one month later. All animals that received streptozotocin were diabetic and lost weight. The insulin level in the pancreas of the diabetic rats was 4% of the control value. Despite the decrease in pancreatic reserve, insulin levels in the brain were on average three times higher (17±8 ng/g) than in controls (6±0.9 ng/g) (Fig. 2).

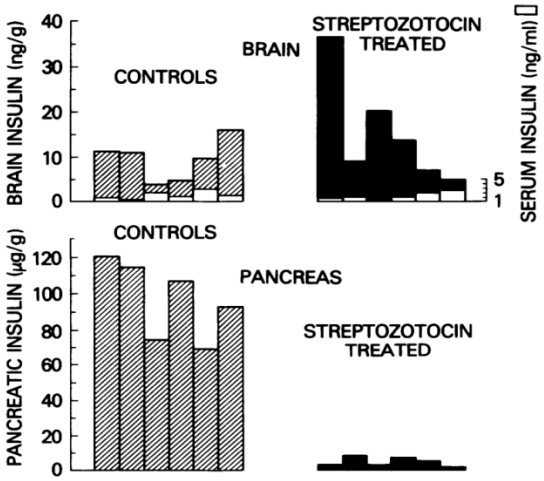

Fig. 1

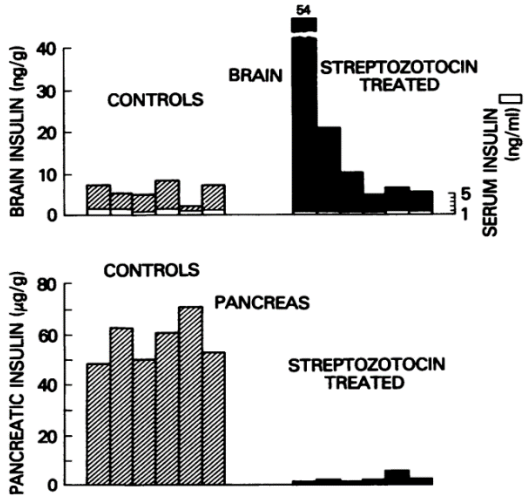

Fig. 2

The role of the blood-brain barrier in CNS insulin resistance

In the second example we want to reflect the risks associated with the use of intravenous or subcutaneous insulin injection and thus emphasize the advantages of intranasal insulin. The mechanism of insulin transport through the HEB has been confirmed many times, but is not fully

understood. The insulin transporter is thought to be a dynamic protein regulated by the current physiological state of the body (Fig.3).

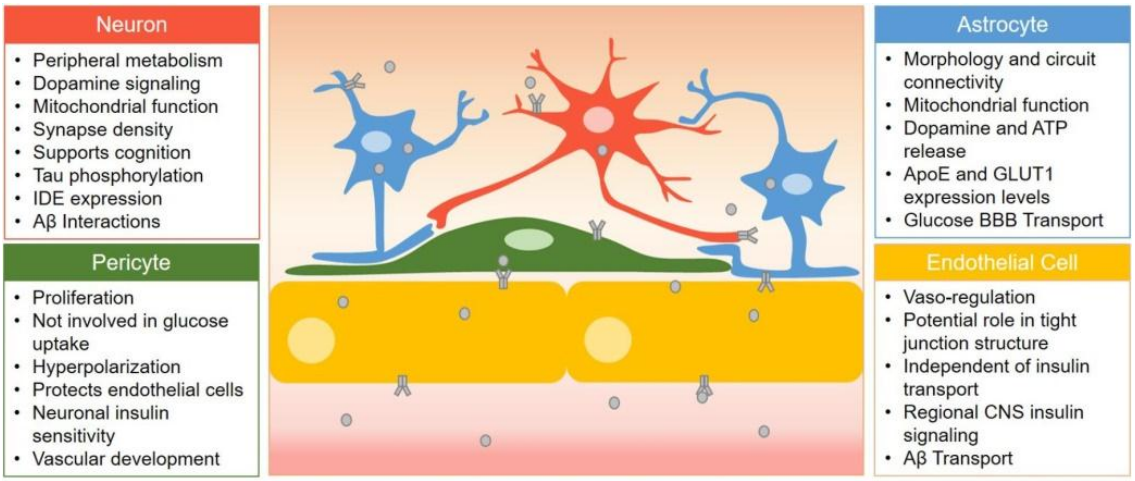

Fig. 3

Although the mechanisms are not fully understood, there are factors and conditions whose influence (changes the rate of transport, total amount and level of insulin binding in the GEB) has already been proven. For example, cerebral insulin levels are decreased in obesity, also the rate of transport through the HEB is about half the normal rate. This effect of obesity is mediated by changes in circulating factors (such as triglyceride triolein). Although the rate of transport does not vary, Alzheimer's disease is also accompanied by CNS resistance to insulin. But the level of reversible binding in the endothelium was increased regionally. In patients with Alzheimer's disease insulin levels are elevated in plasma but decreased in cerebrospinal fluid. This suggests that the HEB transport of insulin may be impaired in Alzheimer's disease. When the CNS is resistant to insulin, one of the most effective treatments is the use of intranasal insulin. This therapy improves receptor signaling in the forebrain and hippocampus. Insulin delivery to the brain by intranasal administration can help overcome CNS insulin resistance.

Insulin increases neuronal viability in ischemia

In this argument we would like to consider an experiment conducted on rats with the creation of artificial ischemia.

One of the most promising neuroprotective agents for the treatment of diseases caused by brain pathologies is insulin, but the effect of intranasal insulin is practically unstudied. In the present experiment we studied the effect of ischemia and reperfusion of the rat forebrain and insulin on the viability of brain neurons. On the 7th day of reperfusion in rats insulin administration (0.5 ME dose one hour before ischemia and daily thereafter) reduces the neurons that died in the hippocampus and frontal lobe cortex compared to the control group of rats. Insulin also increases

the survival of brain cells exposed to H2O2 (Fig. 4). This is achieved by activation of (Akt) and inactivation of (pGSK-3beta) in neurons. And thus, insulin equalizes the ratio of anti- and proapoptotic proteins (Bach/BcI-2) in neurons increased when exposed to H2O2: the ratio increased by 41-64%, while insulin normalizes the ratio and makes it close to the control (Fig. 5).

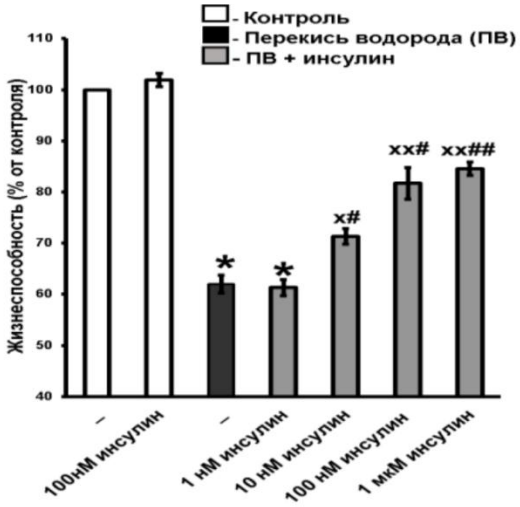

Fig. 4

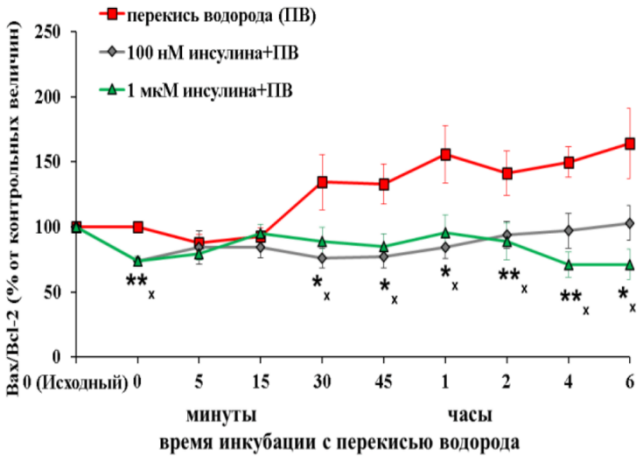

Fig. 5

Conclusion

The mechanism of action of insulin in cerebral ischemia is related to its ability to improve glucose metabolism in neurons, reduce inflammation and increase cell survival. In addition, insulin can stimulate the growth of new blood vessels, which helps to restore blood supply to damaged tissues.

However, it should be noted that intranasal use of insulin for cerebral ischemia is an experimental treatment and requires further research to determine its efficacy and safety. One would like to believe that this therapy will become the leading treatment for ischemia and will help mankind in the fight against this disease.

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УДК 613

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THE EFFECT OF ELECTRONIC CIGARETTES ON THE HUMAN BODY

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It has been more than ten years since electronic cigarettes first appeared on store shelves. During this period, electronic cigarettes have undergone many changes and have become a real cult. Vaporizers appeared - electronic devices that create steam intended for inhalation. However, extreme studies have shown that the cigarettes are not only safe, but can also lead to death On the one hand, this invention allows heavy smokers to "smoke" wherever they want, regardless of restrictions. But, on the other hand, there is reliable evidence that they harm the health of both the smoker himself and the people around him.

Key words: Electronic cigarettes, nicotine, smoking.

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ВЛИЯНИЕ ЭЛЕКТРОННЫХ СИГАРЕТ НА ОРГАНИЗМ ЧЕЛОВЕКА

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Прошло более десяти лет с тех пор, как электронные сигареты впервые появились на прилавках магазинов. За этот период электронные сигареты претерпели множество изменений и стали настоящим культом. Появились испарители - электронные устройства, создающие пар, предназначенный для вдыхания. Однако экстремальные исследования показали, что сигареты не только безопасны, но и могут привести к смерти. С одной стороны, это изобретение позволяет заядлым курильщикам "курить" везде, где они хотят, независимо от ограничений. Но, с другой стороны, есть достоверные доказательства того, что они наносят вред здоровью как самого курильщика, так и окружающих его людей.

Ключевые слова: Электронные сигареты, никотин, курение.

Relevance

Technological progress is a phenomenon that makes our life easier, and sometimes more convenient. Unfortunately, not all innovations can be called completely safe or useful. E-cigarettes are a prime example of this.

The purpose of the study

To find out the impact of electronic cigarettes on human health material and methods of research. theoretical research and survey.

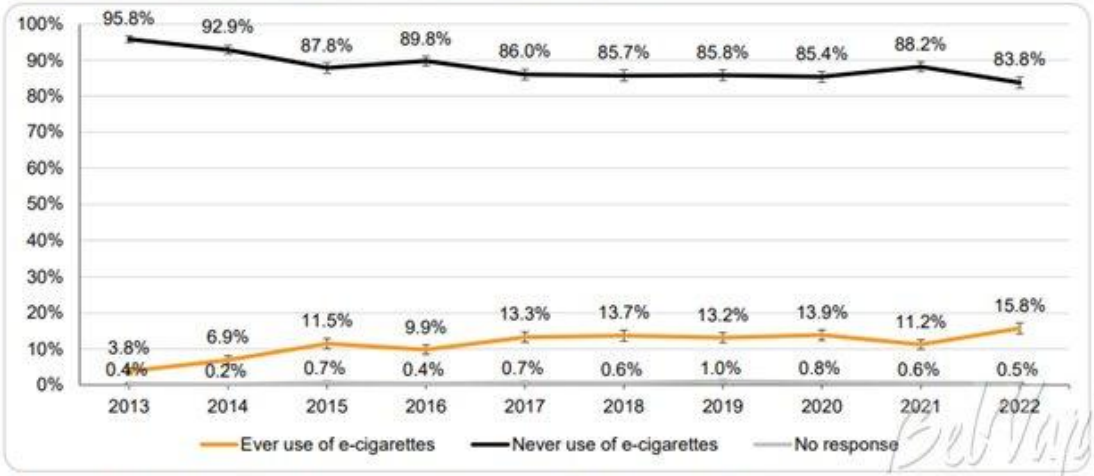
Scientists of the All-Russian Scientific Research Institute reported the results of a detailed study of electronic cigarettes, proving for the first time that they are by no means a safe alternative to conventional smoking, but contain "moderately dangerous substances", but in monstrous concentrations.18 samples of electronic cigarettes, 30 samples of liquids for refilling electronic

cigarette cartridges were studied. Scientists determined the chemical composition of liquid compositions in replaceable cartridges, as well as the chemical composition of "smoke". It was revealed that the composition contains doses of glycerin and nicotine exceeding concentrations.

The Department of Food and Drug Control also concluded that e-cigarettes are not so harmless. Scientists have found substances in the liquid such as ethylene glycol, which is contained in antifreeze for cars, as well as nitrosamine – a substance that can cause the formation of cancer cells in humans, and it is contained in electronic cigarettes in large quantities.

2,613 people took part in the 2022 survey. The main conclusions based on the results of the study. The main points of the survey are given. A significant number (83.8%) have never tried e-cigarettes or are unaware of their existence. There is an increase in the number of 11-17-year-olds who have ever used vape – from 11.2% in 2021 to 15.8% in 2022. Now 7% of teenagers aged 11-17 are smokers, compared with 3.3% in 2021. Under 16 years of age rarely use electronic cigarettes. 10.4% of 11-15-year-olds have tried vaping compared to 29.1% of 16-17-year-olds. Statistics among 11-17-year-olds who soar but have never tried cigarettes are low – 1.7% who report at least monthly use. In 2022, disposable vapes were the most frequent product – 52% compared to 7.7% in 2021. The number of 11-17-year-olds who consider electric cigarettes more harmful than tobacco remained at the level of 2020 and amounted to 40.9%. 42.1% believe that vapes are less harmful than regular cigarettes.

Figure 1. Use of e-cigarettes by GB youth (11-17), 2013-2022



ASH Smokefree GB Youth Surveys, 2013-2022. Unweighted base: All 11-17 year olds (2013 = 1,895, 2014 = 1,817, 2015 = 1,834, 2016 = 1,735, ,2017 = 2,151, 2018 = 1,807, 2019 = 1,982, 2020 = 2,029, 2021 = 2,109, 2022 = 2,111).

Conclusion and conclusions

Awareness of e–cigarettes is generally high - 90%. Frequent usage is still extremely low. At the same time, 3.1% of respondents hover frequently (more than once a week) and 3.9% – from time to time (less than once a week).Thus, although the growth in the use of electronic cigarettes

seems high, the remaining figures show that youth vaping is under control.Smoking both conventional and electronic cigarettes is dangerous for health. It is mainly not about the compatibility of chemicals contained in electronic cigarettes and conventional ones, but about the amount of carcinogenic substances entering the body as a whole.

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УДК 593.16

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GIARDIASIS AND ITS EFFECT ON THE BODY OF CHILDREN

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In the modern world, a large number of people, especially children, are at risk of giardiasis. This article is aimed at studying this disease.

***Key words*:** parasites, vector, diseases, host, death, invasion.

Галлямова А.Р., Степанова К.О.

ЛЯМБЛИОЗ И ЕГО ВЛИЯНИЕ НА ОРГАНИЗМ ДЕТЕЙ

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В современном мире большое количество населения, особенно дети, подвержено заражению лямблиозом. Данная статья посвящена исследованию этого заболевания.

Ключевые слова: паразиты, переносчик, заболевания, хозяин, смерть, инвазия.

Relevance

At the present time, the parasitic tendencies are widespread all over the world, whether it's southern or northern region, the countryside or urban area. Therefore, it's important to know about the possible dangers, the features of the course and consequences of diseases. Variety and non-specificity of the symptomatic, the subsequent risk of re-infection, the increasing resistance of giardia to medical preparations are actual problems in the modern world. In earlier years, it was believed that this disease could occur only in endemic areas, for example, in Asia and Africa. Nevertheless, it has increased its area of dissemination and nowadays it can be found almost everywhere. However, the morbidity factor depends on the social and economic level of countries: developed countries are compared with developing countries that are just starting their way. Resorting to numbers, the frequency with which this infection occurs differs 5-10 times. About 130,000 cases of giardiasis are recorded annually in Russia. Of the 70% of this number are young children (under the age of 14), as they are most susceptible to infection with this parasite. The values presented may vary depending on various factors [9].

According to the data of the Ministry of Health of the Republic of Bashkortostan for 2014, giardiasis was detected in 500,000 patients. There have been large outbreaks of giardiasis from 2014 to 2020. It was recorded more than 60 thousand cases. The actuality of the disease is also known by such facts as the masking of various variants of gastroenterol pathology, food allergies, dermatitis atrophic and many other diseases, which are also facts of invasion.

Giardiasis also can worsen the course of chronic diseases. At the moment, various studies of the development mechanism will be conducted, the pathogenic action. There shall be a rapid detection of giardias. There is a claim for treatment schemes and diagnostics of puking at different stages of the phenomenon [10].

Work objective

To consider the life cycle, ways, factors and methods of invasion of giardiasis, to study the influence of the parasite on the organs and organ systems of children.

Materials and Methods

Several case histories of patients who applied to medical institutions in 2015-2017 were analyzed for a detailed study of the disease in children.

For the presentation of information about evaluation, diagnosis and giardiasis treatment, a search-was performed on clinical queries using the key term "giardiasis" [7].

Results and discussion

Infection with giardiasis occurs by fecal - oral route, often through contaminated water, much less often through food or directly from a sick person to a healthy person.

This disease is caused by protozoa - giardia, they belong to the class of flagellates. The largest disease caused by these parasites occur mainly by fecal contamination of the central water supply system [5]. It’s required for diagnosis and subsequent diagnosis to get epidemiological history data and laboratory results of the alleged patient. Primary diagnosis occurs by the parasitological method. These include: fluorescent antibody tests, analysis of the limerus chain reaction, immunenzyme analyses, which can be used to detect the growth of antigens[10]. The most common factors of infection include children's institutions, caregivers and travelers returning from endemic areas, as well as cystic fibrosis and immunodeficiency. This disease proceeds in 50-75% of children without acute symptoms, the rest have acute diarrhea [3].

The age of the patient varied from 6 to 16 years and included various age groups. Clinical symptom in patients with frequent occurrence and reported epidemics. For example, the symptom of intoxication and impairment of the function of different organs and systems of organs, occurring in statistics in 60% of cases, in fact, in the requested patients were found in 90%[6].

Conclusion and Summary

Giardiasis is the current state of health today. In the presence of an invasion, the incidence of childhood infections increases, as well as the risk of such bloating as bronchitis, otitis and pneumonia. Therefore, in order to solve this issue, it is necessary to carry out various preventive measures. For their organization, it is important to consider a high procent giardiasis among

children 6-7 years old. The most important way of prevention is the fight against water spread - thorough cleaning and increased filtration level. Nonsensical, the study of biology, life cycle, epidemiology and prophylaxis measures are important for science and play a greater role in diagnosis and treatment and practical application in medicine [2].

The immediate goal of giardiasis prevention is to reduce the incidence of diseases in regions with a high incidence of giardiasis, to prevent epidemics, especially among children. The long–term goal is to reduce the incidence of giardiasis. These objectives require the following: individual medical treatment, raising personal hygiene, providing the population with quality care, health care and education [4].

When visiting areas endemic to giardiasis, should be taken it special care and paid attention to the quality of culinary processing of food products and shouldn't purchase products from street vendors and private sellers. It is necessary to eat in places that comply with hygienic rules and regulations. There are such institutions that meet the requirements. In order to prevent infection with giardiasis, it is recommended to carry out the usual boiling of water before using it[1].

From all of the above, it follows that the rational use of a set of available diagnostic tests, as well as strict adherence to approved recommendations for the treatment of giardiasis, make it possible to avoid overdiagnosis of the disease and increase the effectiveness of treatment.

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УДК 616

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THE ROLE OF THE GENETIC FACTOR IN TYPE 1 DIABETES FORMATION

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The article represents a literature review of investigations in the field of genetic predisposition to diabetes mellitus. We have made an attempt to summarize the data obtained over the past few years into a single report.

Key words: type 1 diabetes mellitus, beta cells, HLA system, T-lymphocytes

Газиева К.А.

РОЛЬ ГЕНЕТИЧЕСКОГО ФАКТОРА В ФОРМИРОВАНИИ САХАРНОГО ДИАБЕТА 1 ТИПА

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В статье представлен анализ литературы по исследованиям в области генетической предрасположенности к сахарному диабету. Проведена попытка обобщить полученные за последние несколько лет данные в единый доклад.

Ключевые слова: сахарный диабет 1 типа, бета-клетки, система HLA, Т-лимфоциты

Today, diabetes mellitus is the most important problem of modern endocrinology. According to the World Health Organization dated 2021, there are approximately 537 000 000 people suffering from diabetes mellitus. That is about one out of ten people aged 20 to 79 years old. The health complications caused by diabetes mellitus are the reason of 6.7 million deaths in 2021. By 2030, this figure is expected to rise to 643 000 000 people, and to 783 000 000 people by 2045. Moreover, there are 240000 000 people suffering from diabetes mellitus who are still undiagnosed. The prevalence of diabetes mellitus varies in different regions. The highest rates are found in Pakistan (30.8%), New Caledonia (23.4%) and Egypt (20.9%). In Russia, people with type 1 diabetes mellitus make up 6% of the total population and people with type 2 diabetes mellitus make up 9%. Currently undiagnosed people make up 6% of the total population, [8].

The purpose of research

To identify the role of a genetic factor in type 1 diabetes mellitus formation.

Materials and methods

The literature analysis and review of investigations in the field of genetic predisposition to diabetes mellitus.

Results and discussion

There are two types of diabetes mellitus based on pancreatic beta cells dysfunction (these are the cells that secrete the hormone insulin, it decreases the blood sugar level). This article

provides information about type 1 diabetes mellitus, an insulin-dependent type of diabetes and about its genetic driver.

Type 1 diabetes mellitus

Type 1 diabetes mellitus occurs as a result of autoimmune destruction of beta cells (in other words, beta cells destroy ‘themselves’). This leads to a complete loss of insulin production, without which the blood sugar level is very unstable and it is rarely kept within the normal range, approximately 4 to 6 mmol/l. The symptoms of type 1 diabetes are ketoacidosis (an increase in ketones in the body, which are formed when there is a lack of glucose and a decrease in insulin sensitivity), hypoglycemia (low blood sugar), hyperglycemia and dehydration, which occurs with an increased blood glucose content. Glucose is excreted in the urine, that is why a person with type 1 diabetes suffers from frequent urination [6].

The risk factors for type 1 diabetes mellitus

Type 1 diabetes is a multifactorial disease, it is a result of interaction between genetic and external factors such as stress, viruses and toxic substances. With the destruction of beta cells isolation of autoimmune antigens occurs, which activate T-lymphocytes. Then the class II HLA antigens start to be produced on the surface of damaged beta cells. The human leukocyte antigen (HLA) system is a complex of genes that exercise genetic control of the immune response and the interaction between cells that implement this response. The production of the class II HLA antigens transforms beta cells into antigen-presenting immune cells, which trigger a cellular immune response by processing the antigen and exposing it in a form recognized by the T-lymphocyte in the antigen presentation, since T-cell receptors cannot recognize all fragments of antigens, [2,5].

In addition to antigens, there T-regulatory cells (Tregs) that regulate T-lymphocyte activity. They play a role in suppressing the immune response and maintaining immune homeostasis. After maturation in the thymus tregs migrate into tissues and express receptors for interleukin 2, which is an inflammatory and immunity mediator, and an intracellular transcription factor FoxP3, which is responsible for the functioning of T-regulatory cells, [7].

The role of the genetic factor for the type 1 diabetes formation

The most important genetic factor for development of type 1 diabetes are the class II HLA genes, or histocompatibility genes. They are located on the short arm of chromosome 6 and represented by a number of clusters. These are groups including repeats of the same or related genes located side by side on a chromosome. In total, there are 24 genes. Nowadays, there are 60 regions of HLA known which could affect on the development of type 1 diabetes mellitus. Loci associated with the development of type 1 diabetes mellitus are called IDDM association loci (insulin-

dependent diabetes mellitus), or insulin gene regions. In addition to the genes of the HLA system (IDDM1), which make up 32% of the total number of IDDM association loci, the insulin gene regions are located on the short arm of chromosome 11 at locus 11p15 (IDDM2, 10%), on the long arm of chromosome 15 at locus 15q26 (IDDM3, 5%) and on the long arm of chromosome 11 at locus 11q13 (IDDM4, 4%) [2,4].

The relationship between type 1 and type 2 diabetes

The heritability coefficient for diabetes mellitus of both types is about 0.6 to 0.8. According to Endocrinological Research Center for 2003, the incidence of both type 1 and type 2 diabetes mellitus is increased among siblings with type 2 diabetes. However, the incidence of type 2 diabetes does not differ from the population one among siblings with type 1 diabetes. The results of this data research indicated that two types of diabetes mellitus are inherited independently of each other, [1].

Conclusions

The genetic factors of the formation of type 1 diabetes play a big role. Over the past 40 years, Russian endocrinology researchers have been carrying out genetic and hormonal-metabolic researches of type 1 diabetes mellitus. Thus, the financing of the federal project ‘Fight against diabetes mellitus’ initiated by the ‘NMIC of Endocrinology’ has been introduced in the law on the fifth of December in 2022 [3].

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УДК 616-006

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THE INFLUENCE OF THE PSYCHOLOGICAL STATE OF PATIENTS WITH CANCER ON THEIR RECOVERY

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This article explores the impact of a psychological state on cancer recovery and measures to improve a patient's mental health during treatment. It will also be considered what disorders the psyche of a cancer patient is exposed to and why cancer patients need psychological help. An important point of studying the topic is the need to determine the effect of the disease on the patient's psyche in order to clarify the influence of the emotional state on the course of the disease.

Key words: cancer, oncology, relapse.

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ВЛИЯНИЕ ПСИХОЛОГИЧЕСКОГО СОСТОЯНИЯ ПАЦИЕНТОВ С ОНКОЛОГИЧЕСКИМИ ЗАБОЛЕВАНИЯМИ НА ИХ ВЫЗДОРОВЛЕНИЕ

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В этой статье исследуется влияние психологического состояния на выздоровление от рака и меры по улучшению психического здоровья пациента во время лечения. Также будет рассмотрено, каким расстройствам подвержена психика онкобольного и почему онкобольным нужна психологическая помощь. Важным моментом изучения темы является необходимость определения влияния заболевания на психику пациента с целью выяснения влияния эмоционального состояния на течение болезни.

***Ключевые слова*:** рак, онкология, рецидив.

Relevance

Cancer is one of the most severe and life-threatening diseases in the world. It affects not only the physical health but also the mental health of patients. The psychological state of oncology patients has been considered as a critical factor impacting their prognosis, treatment outcome, and quality of life. Therefore, understanding the influence of the psychological state on cancer treatment and recovery has gained increasing attention from medical researchers and practitioners.

Purpose of the Study

This article aims to investigate the influence of the psychological state of oncology patients on their health outcomes. Specifically, it will explore the impact of psychological distress, such as anxiety and depression, on patients' ability to recover from cancer, make informed decisions, and cope with treatment-related side effects.

Material and Methods

This study is a literature review based on a comprehensive search for relevant studies that were published in academic journals. Key databases, such as PubMed, Cochrane Library, and

Scopus, were used to identify relevant studies published from 2010 to 2021. The keywords used for the search were "oncology," "psychological distress," "anxiety," and "depression". This theoretical analysis is carried out in order to study the influence of the psychological state of patients with cancer on their recovery, measures to improve their mental health during treatment and violations of the mental well-being of patients.

Results and Discussion

The results of this study demonstrate that psychological distress has a negative impact on cancer patients' health outcomes. Anxiety and depression are the most common psychological disorders experienced by cancer patients, with estimates ranging from 20% to 50% of all cases. Also, in the predisposition to these conditions, there is a dependence on gender, which is shown in diagrams 1 and 2.

Psychological distress can affect patients' adherence to cancer treatments, their decision-making processes, and their ability to cope with the side effects of treatment. Several studies have shown that psychological distress also impacts mortality rates and the recurrence of the disease.

Moreover, there is evidence that psychological interventions, such as cognitive-behavioral therapy, mindfulness-based stress reduction, and supportive-expressive group therapy, can provide effective support for oncology patients in managing their psychological distress. These interventions can improve patients' quality of life, enhance their emotional well-being, and promote their ability to manage the physical symptoms of cancer.

It is important to maintain the psychological well-being of cancer patients throughout the treatment process. There are several ways to improve the patient's psychological state, such as adequate sleep, regular exercise, following a healthy diet and practicing relaxation techniques such as yoga or meditation.

The support system is also an important factor in improving the mental health of the patient. Family, friends and oncologists can offer emotional support and help patients cope with the difficulties of cancer treatment. Encouraging patients to engage in activities they enjoy, such as hobbies or socializing, can also help them maintain a positive attitude.

Conclusion

This study highlights the importance of addressing psychological distress in oncology patients. It is essential to consider the emotional and psychological needs of patients in the cancer treatment process. Medical practitioners should recognize the potential impact of psychological distress on cancer outcomes and provide appropriate psychological interventions to support patients throughout their cancer journey. By providing timely psychological support to oncology patients,

medical practitioners can improve patients' quality of life, reduce medical costs, and enhance patients' chances of successful treatment and recovery.

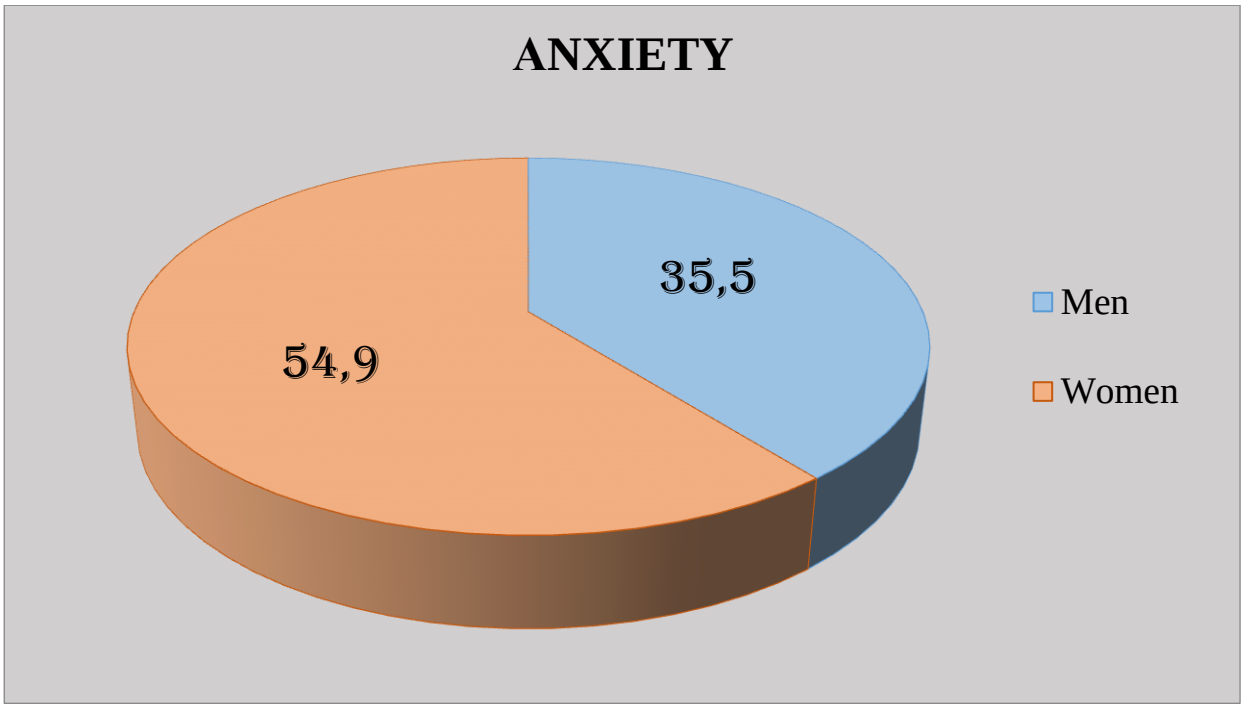

Diagram 1. Predisposition to a state of anxiety depending on gender.

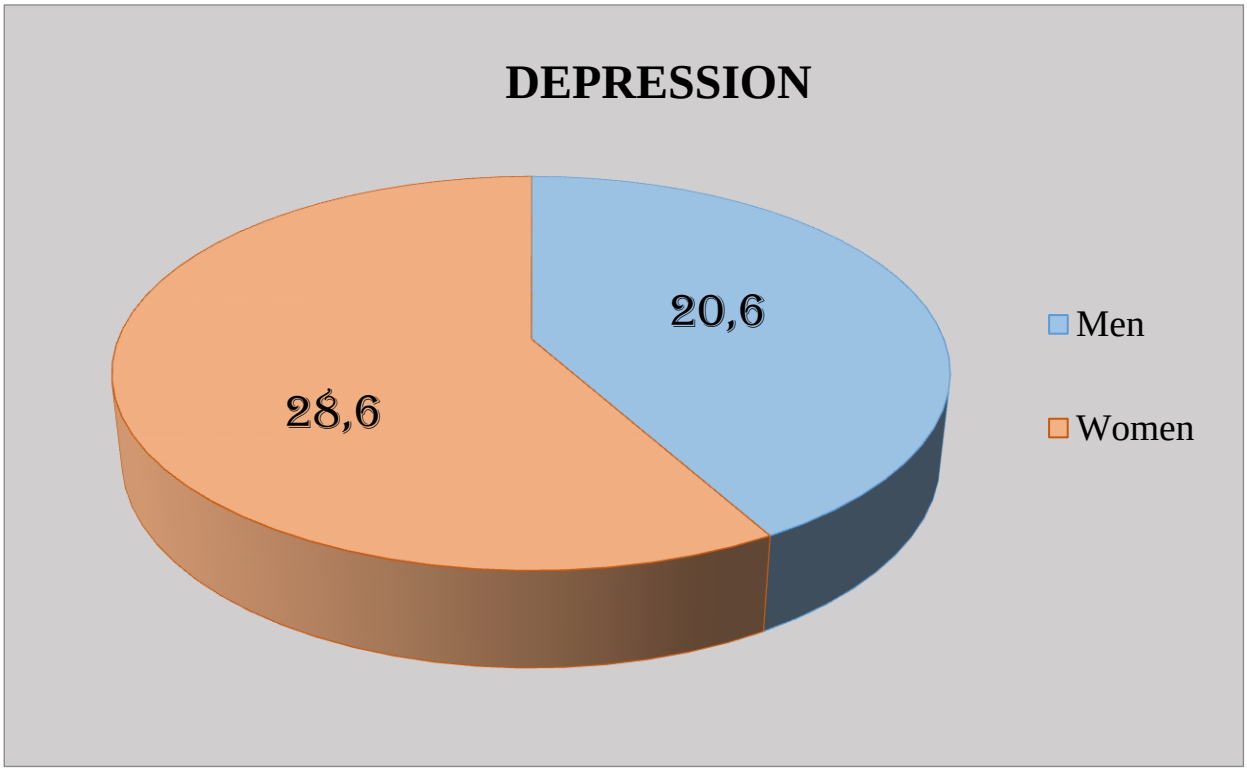

Diagram 2. Predisposition to a state of depression depending on gender.

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УДК 618177

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CAUSES OF INFERTILITY

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Infertility is a disease that is characterized by the inability to become pregnant after 12 months of regular sexual activity. Currently, the problem of reproductive health remains one of the most important in the world. The percentage of infertile couples is increasing every year. Particular attention is paid to the factors that cause the occurrence of infertility. One of the priorities of medicine is the preservation of reproductive health, which can be achieved by identifying the factors that negatively affect it.

***Key words*:** causes of infertility, polycystic ovary syndrome, sex hormones, infections, amenorrhea.

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ПРИЧИНЫ ЖЕНСКОГО БЕСПЛОДИЯ

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Бесплодие - это заболевание, которое характеризуется невозможностью забеременеть после 12 месяцев регулярной половой жизни. В настоящее время проблемы репродуктивного здоровья остаётся одной из важнейших в мире. Процент бесплодных пар растёт с каждым годом. Особое внимание в статье уделено факторам, обуславливающим возникновение бесплодия. Одна из приоритетных задач медицины - сохранение репродуктивного здоровья, которого можно достичь, выявив факторы, негативно влияющие на него.

Ключевые слова: причины бесплодия, синдром поликистозных яичников, половые гормоны, инфекции, аменорея.

Infertility is a disease characterized by the inability to achieve a clinical pregnancy within 12 months of regular intercourse without contraception. Infertility can be caused by many different causes. In 1 out of 4 couples, the cause cannot be determined.

Infertility in women often occurs due to problems with ovulation (the monthly release of an egg from the ovaries).

Problems with ovulation can result from:

• polycystic ovary syndrome (PCOS)

Studies have proven the role of obesity and insulin resistance in the origin of reproductive dysfunction. Chronic anovulation, hyperandrogenism of ovarian origin develops. With PCOS, menstrual irregularities occur due to violations of the ovarian enzyme systems. The characteristic chronic anovulation leads to the development of infertility. But not all women with metabolic syndrome develop dysfunction of the reproductive system, there is an opinion that there is a hereditary predisposition to the stimulating effect of insulin on androgen synthesis in the ovary.

• Thyroid problems – Both an overactive thyroid and an underactive thyroid can prevent ovulation.

According to research, the most important change in hypothyroidism is the level of sex steroid-binding globulin, which decreases with hypothyroidism. Also, hypofunction of the thyroid gland leads to disruption of the processes of synthesis, transport, metabolism and the effects of sex hormones. With hypothyroidism, the susceptibility of the ovaries to gonadotropins decreases: instead of the usual estrogen, estriol is formed - the least active fraction of estrogens - which does not provide normal secretion of gonadotropins, which leads to anovulation, dysfunctional uterine bleeding or hypogonadotropic amenorrhea with severe hypothyroidism. With long-term hypothyroidism, secondary hyperprolactinemia develops, which can manifest itself as oligoopsomenorrhea, amenorrhea, galactorrhea, and secondary polycystic ovaries.

• premature ovarian failure - when the ovaries stop working before the age of 40

MORPHOLOGICAL AND FUNCTIONAL CHANGES IN THE OVARIES IN LATE REPRODUCTIVE AGE

Approximately after 30 years in the body of a woman, processes begin that lead to a decrease in fertility: the function of the ovaries decreases, their morphology changes. Collagen increases in the ovarian tissue, part of the arteries that feed the ovary can be obliterated due to protein degeneration, which leads to a decrease in the number of eggs.

OBESITY AND SEX HORMONES

Adipose tissue is able to accumulate sex steroid hormones, which leads to an increase in the steroid pool. These phenomena cause an increase in the synthesis and activity of male sex hormones in women, which in turn affect ovarian function.

SCARS AFTER SURGERY

Pelvic surgery can damage the fallopian tubes, which connect the ovaries to the uterus, and leave scars.

PROBLEMS WITH CERVICAL MUCUS

During ovulation, the mucus in the cervix becomes thinner, making it easier for sperm to pass through. The problem with mucus occurs with trauma, surgical intervention on the cervix, which in turn makes it difficult to transport sperm to the uterus.

MYOMAS

Non-cancerous growths in or around the uterus prevent a fertilized egg from attaching.

ENDOMETRIOSIS

Endometriosis is a condition in which small pieces of the lining of the uterus begin to grow in other places, such as the ovaries.

This leads to damage to the ovaries, fallopian tubes and causes fertility problems.

INFLAMMATORY DISEASES OF THE PELVIC ORGANS

Pelvic inflammatory disease (PID) is an infection of the female upper reproductive tract, which includes the uterus, fallopian tubes, and ovaries.

Caused by sexually transmitted infections (STIs).

PID can damage the fallopian tubes and leave scars, preventing the egg from moving down into the uterus. Contribute to the violation of the structure and function of the ovaries.

In addition, microorganisms present in the genitourinary organs with abnormal immunoreactivity block spermatozoa, impair their movement, and lead to the creation of antisperm antibodies.

Infections caused by chlamydia, gonococci, mycoplasmas can lead to anatomical changes in the fallopian tubes that cause an ectopic pregnancy.

THE EFFECT OF NICOTINE ON THE FEMALE BODY

- impairs the blood flow of the ovaries, which leads to a deterioration in the nutrition of the eggs and, as a result, such eggs after fertilization cannot gain a foothold in the uterine cavity
- reduces the level of sex hormones, which leads to cycles without ovulation
- worsens the blood circulation of the pelvic organs, which leads to a deterioration in the quality of the endometrium
- increase the likelihood of the development of inflammatory processes and the reproduction of opportunistic flora in the reproductive organs, which leads to damage to the cervix, provokes fetal pathologies, abortion

MEDICINES

Medicines also have a significant effect on infertility:

• long-term use or high dosage of non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen or aspirin, can make it difficult to conceive;

• drugs used for chemotherapy can sometimes cause ovarian dysfunction;

• neuroleptic drugs used to treat psychosis can cause amenorrhea or infertility;

CONCLUSION

The medical significance of the problem of female infertility is determined by the need to address a number of issues related to timely and correct diagnosis, increasing the effectiveness of its

treatment and prevention. A high percentage of infertility speaks in favor of the relevance of the problem and the need for further study.

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УДК 616.24-008.47

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LITERARY REVIEW AND ANALYSIS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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The article highlights the relevance of chronic obstructive pulmonary disease, during the study of the pathogenesis, clinical picture, and methods of treatment of the disease were studied.

Key words: COPD, smoking, psychosomatics, respiratory failure.

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ОБЗОР ЛИТЕРАТУРЫ И АНАЛИЗ ХРОНИЧЕСКОЙ ОБСТРУКТИВНОЙ БОЛЕЗНИ ЛЕГКИХ

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В статье подчеркивается актуальность хронической обструктивной болезни легких, в ходе исследования были изучены патогенез, клиническая картина и методы лечения заболевания.

Ключевые слова: ХОБЛ, курение, психосоматика, дыхательная недостаточность.

Relevance: Chronic obstructive pulmonary disease (COPD) is one of the most common diseases of the respiratory system, differentiating by a progressive permanent violation of lung ventilation and the presence of frequent exacerbations. According to the World Health Organization (WHO), this disease has a significant impact on the quality of life of patients and occupies one of the leading positions in the structure of the incidence of the population.

Purpose of the study: To study the pathogenesis, clinical picture, and methods of treatment of COPD.

Materials and methods of research: Analysis of scientific articles and medical literature, WHO statistics.

Results and discussion: COPD are a complex single pathology of the pulmonary system, which is caused by the presence of chronic obstructive bronchial disease and emphysema. Chronic bronchitis and emphysema of muscle tissue with connective tissue changes in the walls of the bronchi and alveoli. The presence of possible mechanical and hemodynamic factors in the development of emphysema work to impair the respiratory function of the lungs. Bubble emphysema is complicated by the degradation of the elasticity and structural elements of the lung tissue, which leads to impaired ability of the lungs to perform gas exchange. Portal vein pressure appears with signs of systolic and diastolic expansion of the right heart. There is stretching and thinness of the walls of blood vessels in the pulmonary circulation. The prognosis of respiratory

disorders can be determined by the development of transformational changes in lung tissue. Factors that influence the occurrence of COPD are divided into internal and external. Intrinsic factors are genetic factors (alpha-antitrypsin deficiency), airway hypersensitivity, lung growth. External risk factors: tobacco smoking, industrial dust and chemicals, atmospheric pollutants, infections, socioeconomic status. However, in addition to the above factors, the development of COPD can also be influenced by a psychological factor known as psychosomatics [3]. Psychosomatic disorders are processes associated with the occurrence of physical diseases against the background of psychological problems. These problems can include stress, anxiety, depression, and other psychological factors that can affect a person's health. People with COPD are often prone to anxiety and depression. These psychological problems can, in turn, exacerbate symptoms and increase the risk of an exacerbation. Thus, psychosomatic problems can have a significant impact on the development of COPD. The clinical picture of COPD is characterized by the presence of a triad of symptoms: chronic cough, shortness of breath, discharge from the bronchi. Patients often experience exacerbations associated with deterioration of lung function and infectious complications. The classification of COPD, taking into account the recommendations of the GOLD program, is as follows [5].

Table 1

Classification of COPD according to GOLD (2011)

Patient group	Characteristic	Spirometry classification	Number of exacerbations in 1 year	mMRC scale	CAT test
A	Low risk of exacerbations Symptoms are not expressed	GOLD 1-2	≤1	0-1	<10
B	Low risk of exacerbations Symptoms are expressed	GOLD 1-2	≤1	≥2	≥10
C	High risk of exacerbations Symptoms are not expressed	GOLD 3-4	≥2	0-1	<10
D	High risk of exacerbations Symptoms are expressed	GOLD 3-4	≥2	≥2	≥10

When symptoms of COPD appear, it is necessary to seek medical help, where diagnosis is made, and their treatment is prescribed. Questionnaires, chest x-rays, and changes in breathing force and rate, such as high-speed (FVC) and low-speed (FEV1) air spirometry, are used as primary diagnostic methods. In the diagram below, we can observe a decrease in the volume of forced air in the smoking population [4].

Subsequent analysis of the dynamics, the use of tomographic methods, less expensive and reliable, contributed to the emergence of ECG and instrumental studies of the respiratory system. COPD treatment begins with eliminating or reducing the patient's exposure to the causes of the disease, primarily smoking cessation. Also, a course of drug therapy is carried out aimed at eliminating and relieving the symptoms of the disease, including the use of bronchodilators, glucocorticosteroids, antibacterial and mucolytic drugs. Preference is given regular sessions of physical therapy, a set of various exercises and external therapy, which help maintain the functional reserves of the respiratory system and improve gas exchange. As part of the treatment of COPD, in addition to drug therapy, psychological support is a possible treatment. Psychotherapy can help patients cope with psychological problems and reduce the risk of exacerbations. In addition, it is important to reduce stress and anxiety levels, including through regular physical activity, meditation, yoga, and other relaxation techniques.

Conclusion: COPD is a disease that our modern medicine can overcome. An important point is the prevention of the disease, including quitting smoking and maintaining a healthy lifestyle. Thus, the prevention of the development of the disease is no less important task of the medical community than the treatment of this disease. In turn, compliance with the recommendations of doctors and physicians related to the adherence to a healthy lifestyle and regular examinations by specialists improves the lives of not only patients with COPD, but also maintains the health of the population as a whole.

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УДК 616.858

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DOPAMINE. MOTIVATION, DRUG ADDICTION AND PARKINSON'S DISEASE

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Dopamine is a hormone and neurotransmitter from the group of biogenic amines. The main function of the dopaminergic system is the regulation of motor acts and the emergence of positive emotions from them. It is enough to recall children who get a lot of joyful emotions from simple, in the opinion of an adult, movements.

Key words: dopamine, motivation, drug addiction, Parkinson's disease, biochemistry of brain.

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ДОФАМИН. МОТИВАЦИЯ, НАРКОТИЧЕСКАЯ ЗАВИСИМОСТЬ И БОЛЕЗНЬ ПАРКИНСОНА

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Дофамин гормон и нейротрансмиттер из группы биогенных аминов. Главная функция дофаминовой системы – регуляция двигательных актов и получения положительных эмоций от них.

Ключевые слова: дофамин, мотивация, наркотическая зависимость, болезнь Паркинсона, биохимия мозга.

Relevance

The mediator creates a strong sense of anticipation from getting a result or unwillingness to get it, that is, it directly affects motivation. Dopamine underlies the development of drug addiction, Parkinson's disease and schizophrenia.

Purpose

To show the role of dopamine in motivation, development of drug addiction, Parkinson's disease and schizophrenia.

Materials and methods: Articles in PubMed, elibrary.ru databases on the subject of the study were analyzed: the criteria for selection of publications were key words.

Results and discussion

Dopamine Functions

Dopamine is a hormone and neurotransmitter from the group of biogenic amines. The main function of the dopaminergic system is the regulation of motor acts and the emergence of positive emotions from them. It is enough to recall children who get a lot of joyful emotions from simple, in the opinion of an adult, movements.

The mediator creates a strong sense of anticipation from getting a result or unwillingness to get it, that is, it directly affects motivation. Delicious food, sexual intercourse, buying a new gaming laptop, even the very thought of something pleasant, and other similar positive experiences are accompanied by the release of dopamine, giving this experience significance. Also getting new information, adaptation, self-improvement, training. All this is the merit of dopamine.

Also, the functions include inhibition of prolactin (dopamine of the hypothalamus), sympathetic effect (chemical structure is similar to adrenaline and norepinephrine). This effect is used in medicine to cause mild electrical stimulation. In the bloodstream, it turns into adrenaline and norepinephrine.

The precursor of dopamine is the amino acid tyrosine. With the help of tyrosine hydroxylase, L-DOPA (levodopa) is formed, then dopamine is synthesized by decarboxylation. All transformations occur in the cytoplasm of the neuron.

The reaction at the dopamine stage stops in the neurons of:

- the substantia nigra
- midbrain tires
- hypothalamus

Dopaminergic synapses

Dopamine molecules accumulate in vesicles (synaptic vesicles). Upon arrival of the action potential, dopamine is excreted into the synaptic cleft and acts on dopamine receptors associated with the G protein located on the postsynaptic membrane. It can be reloaded into vesicles by reuptake, and its excess is destroyed by the enzyme MAO (monoamine oxidase). There are also presynaptic receptors that limit the release of dopamine. There are only 5 dopamine receptors (D1, D2 ... D5), the main one is D2. All metabotropic ones act through adenylate cyclase.

The dopamine system

The nigrostriatal subsystem is motor activity.

80% of the neurotransmitter is secreted by axons of this subsystem. The bodies are located in the compact part of the substantia nigra, and some of the fibers start from the neurons of the lateral ventral tire. The cells of the compact part of the black substance give projections into the striatum, and the cells of the ventral tire — into the nucleus accumbens. These neurons degenerate in Parkinson's disease, which leads to the loss of dopaminergic synapses and the development of motor disorders: limited movement, tremor of the hands at rest. In the substantia nigra, the medial and lateral part (consists of GABA neurons)

Mesocortical subsystem – motivation, self-control.

The bodies of the neurons forming the mesocortical tract are located in the ventral cap, and the main projections of these neurons reach the cortex. It is shown that the same neuron can give projections to a variety of cortical and subcortical structures. The mesocortical subsystem has a great influence on the activity of neurons forming the cortical-cortical, cortical-thalamic and cortical-striate pathways.

Mesolimbic subsystem – memory, emotions, pleasure.

The sources of dopaminergic projections of this subsystem are located in the ventral tire area and partially in the compact part of the black substance. Their processes go to the cingulate gyrus, amygdala, olfactory tubercle, N. acumbens, hippocampus, parahippocampal gyrus, septum and other structures of the limbic system of the brain. Having wide connections, the mesolimbic system also influences the frontal cortex and hypothalamus.

The tuberoinfundibular subsystem is formed by the axons of dopamine neurons located in the arcuate nucleus of the hypothalamus, which are directed to the outer layer of the median elevation. This tract controls the secretion of prolactin.

Incentive and motivation system. Olds and Milner's study on rats.

The essence of the experiment was as follows: when the rats got into a certain corner of the cage, they were beaten with an electric shock. To do this, electrodes were inserted into the rats' brains. Hypothetically, the rats should start walking around this corner if they experience pain or discomfort. The result was unexpected: after the next electric shocks, the rats went back for a new portion of electric shocks. When they were allowed to push the lever themselves, the rodents stimulated themselves again and again. Attempts to experience an electric shock reached 700 strokes per hour. The rats, refusing food and water, continued to shock themselves.

The found part of the brain was called the "pleasure center" – this is the septal area adjacent to the corpus callosum, as well as a small part of the striatum – the nucleus accumbens. Subsequently, it became known as the center of "expectation of pleasure".

Our understanding of dopamine has changed in the past and is changing again. One important difference is the effect of dopamine on current behavior (performance) and the effect of dopamine on future behavior (learning).

Then the first recordings of dopamine neurons appeared in behaving monkeys (in the areas of the midbrain that are projected into the forebrain: ventral region of the tire, VTA /compact part of the substantia nigra, SNc). Among the observed patterns of arousal were short bursts of activity on stimuli that caused immediate movements. This "phase" release of dopamine was initially

interpreted as supporting "behavioral activation" and "motivational arousal", in other words, as activating the current behavior of the animal.

The release of dopamine is almost always used by the brain to achieve the desired goal. The path to your goal may be full of pain and suffering, but as long as you want to achieve the goal.But when you achieve what you have longed for, you may experience a sense of disappointment, since dopamine is no longer required.

Dopamine encourages you to take actions to find pleasure. The received reward gives an incentive to search for further rewards, which, in turn, give an incentive to search for the next one, and so on in a circle (for example, flipping through the feed on social networks), so easy sources of pleasure provoke addiction. Hence, receiving a reward gives confidence in the correctness of previous actions and gives motivation in subsequent actions.

Mesocortical system.

Dopamine in the nuclei of the ventral tire, their axons pass into the cerebral cortex, regulate the speed of thinking, positive emotions associated with obtaining new knowledge, creativity, humor.

Mesolimbic system.

Regulation of general importance, positive reinforcement when satisfying their needs.

Plays a great role in acquiring new skills and learning.

Dopamine plays a major role in generating positive emotions. Dopamine agonists are cocaine, amphetamine, neuroleptic antagonists.

Dopamine released in the synapses of the nucleus accumbens is the main colletor of positive emotions in the brain. From the nucleus accumbens through the thalamus, signals enter the BP cortex. As a result, at the subjective level we feel positive emotions, at the cortical level we remember positive reinforcements.

The mechanism of drug addiction

Amphetamine

These substances weaken the reuptake of dopamine, activate loading into vesicles, and partially block MAO. As a result, a lot of dopamine is released and neurotransmitter reserves are depleted, and then the appearance of positive emotions, pain relief, euphoria. It is addictive and highly addictive.

Cocaine

Cocaine blocks the reuptake of dopamine, disrupts the work of the protein pump. It gives a sharp rapid surge of emotions, accelerates thinking, gives a feeling of a surge of strength and energy, a sense of self-importance. As a result, a dependency is formed.

Parkinson's disease

Slow death of dopamine neurons of the substantia nigra after 60 years – 3-5 people per 1000, after 85 years – 3-4% percent. It develops within 10-20 years. The importance of presynaptic toxic proteins parkins and alpha-synucleins in the development of the disease is also considered. Levi's corpuscles (pathological aggregates of alpha-synuclein) are formed. Today there are no diagnostic tests of Parkinson's disease based on biochemical studies. The proteosomal system does not have time to destroy improperly packaged proteins, they accumulate in Levi's corpuscles or in the cytoplasm and destroy the cell. The reason is a mutation in the genes, as well as environmental factors.

Symptoms: akinesia (difficulty starting movements), shaking of the hands and head, opposable thumb.

Higher functions are not affected, the problem is in the motor part of the basal ganglia. A number of studies have suggested using the level of peripheral alpha-synuclein as a prognostic marker of PD, but this question remains open to the present.

The treatment is based on the effective use of L-DOPA (levadopa). Passes BBB is a precursor of dopamine, increases the activity of dopamine neurons, but does not stop the degeneration of neurons of the substantia nigra. Therefore, we have to constantly increase the dose of the drug.

MAO inhibitors (selegin, rasagilin) and COMT (entacapone, tolcapone)

D2 D3 receptor agonists piribedil, pramipexole, and ropinirole, transdermal patch rotigotin and parenterally applied apomorphine. Ergoline derivatives due to their side effects (increased risk of pleuropulmonary, retroperitoneal and cardiac fibrosis) are the drugs of the second choice. These include bromocriptine, cabergoline, alpha-dihydroergocryptin, lisuride and pergolide.

Amantadine stimulates the release of dopamine from neuronal depots and increases the sensitivity of dopaminergic receptors to the mediator (dopamine).

The prospects:

- planting of stem cells in the black substance
- electrical stimulation of the brain

Schizophrenia

Excessive activity of the ventral tire (genetically determined), excess of dopamine receptors in the cortex. It is enhanced by dopamine agonists and levodopa.

Symptoms: hallucinations, thinking disorders, delusions, "voices in the head", poverty of speech, inadequacy of emotions, various types of mania.

The treatment is based on neuroleptics, drugs to alleviate the symptoms of schizophrenia. One of the first drugs is aminazine, an antagonist of the dopamine and norepinephrine receptors. Haloperidol is a D2 antagonist.

Conclusion and implications

Based on the above data, we can conclude that knowledge of the physiology and biochemistry of dopamine we can treat Parkinson's disease, Schizophrenia and drug addiction.

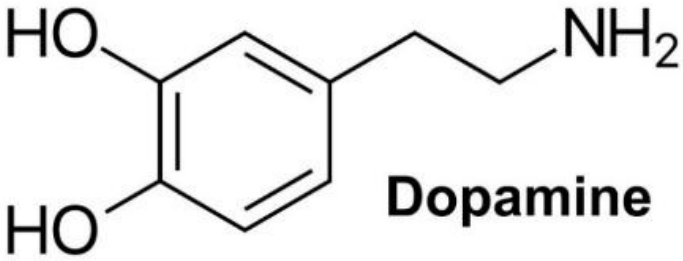

Fig.1. Chemical structure of dopamine

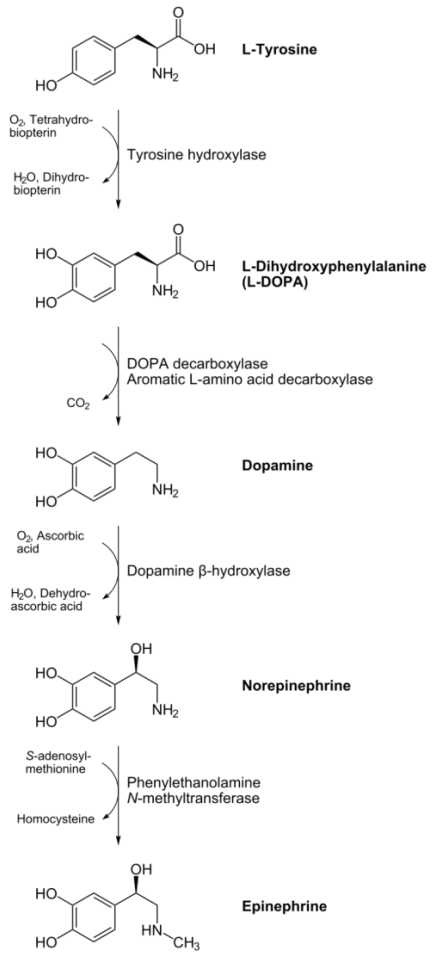

Fig.2. Dopamine biosynthesis

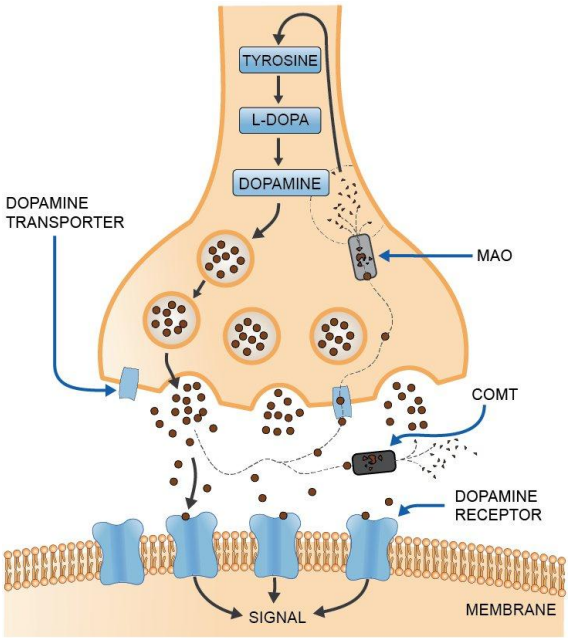

Fig.3. Dopaminergic synaps

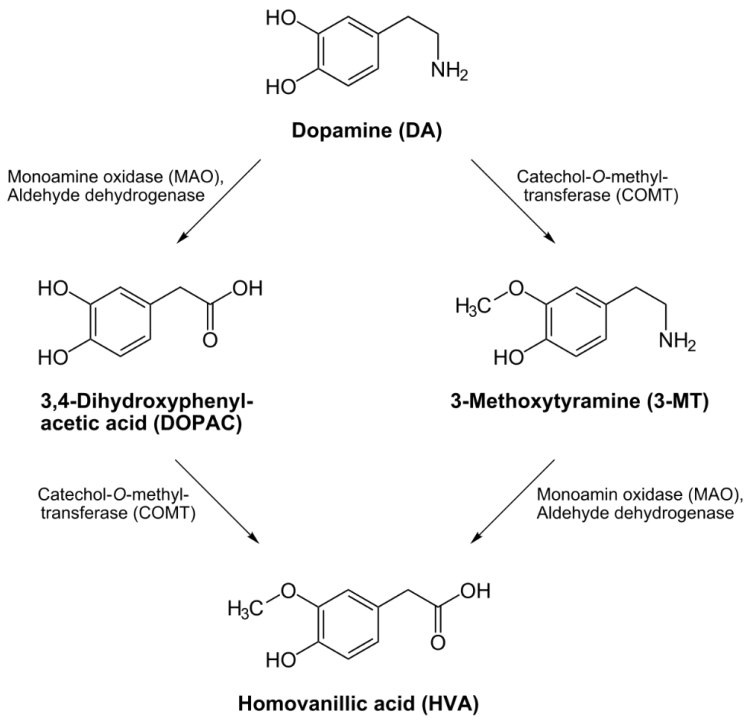

Fig.4. Reuptake of dopamine

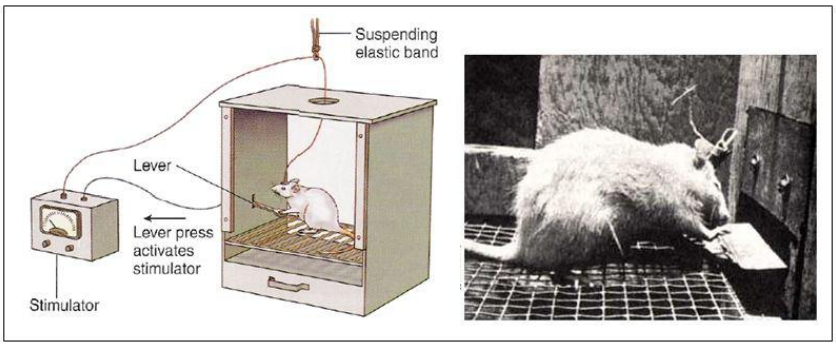

Fig.5. The Olds and Milner experiment

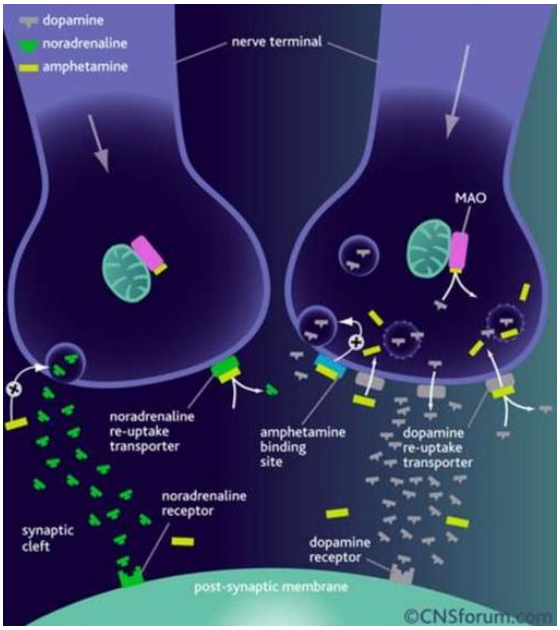

Fig.6. The effect of amphetamine on dopamine synapse

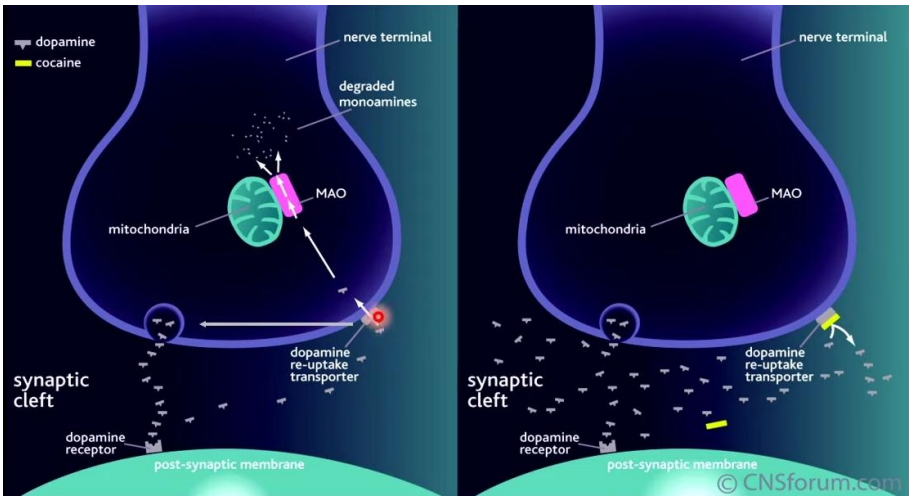

Fig.7. The effect of cocaine on the dopamine synapse

Fig. 8. Degenerative changes in the substantia nigra of the midbrain

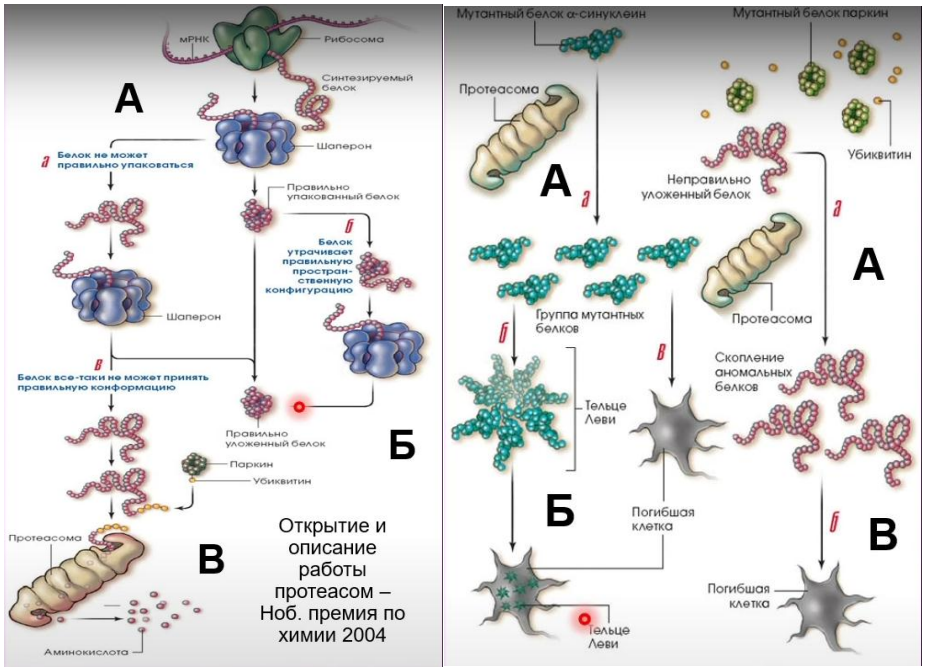

Fig.9. The mechanism of accumulation of parkins and synucleins in neurons

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УДК 616.4

Karamandieva A.R.

ANALYSIS OF THE INCIDENCE OF DIABETES MELLITUS

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This article discusses the disease diabetes mellitus .According to literature sources, diabetes mellitus can be classified into several types, this is by pathogenesis (type 1 and type 2 diabetes mellitus), by the peculiarities of the physiological state (in pregnant women), by the severity of the course of the disease, and so on.Thanks to scientific and technological progress, today there are many diagnostic methods for determining the presence of diabetes mellitus, for example, such as fasting blood tests, blood test for the content of C-peptide,blood test for the content of glycosylated hemoglobin and so on.Prevention of this disease is of no small importance, which includes regular exercise, proper nutrition, a good psycho-emotional state, and so on.And finally, statistical data on the incidence of diabetes mellitus in Russia and the Republic of Bashkortostan were collected.

Key words: diabetes mellitus,diagnostic methods, blood tests, prevention,statistic.

Карамандиева А.Р.

ИССЛЕДОВАНИЕ ЗАБОЛЕВАЕМОСТИ САХАРНЫМ ДИАБЕТОМ

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В данной статье рассматривается заболевание сахарный диабет. Согласно литературным источникам, сахарный диабет можно классифицировать на несколько типов, это по патогенезу (сахарный диабет 1-го и 2-го типов), по особенностям физиологического состояния (у беременных женщин), по тяжести течения заболевания и так далее. Благодаря научно-техническому прогрессу сегодня существует множество диагностических методов определения наличия сахарного диабета, например, таких, как анализ крови натощак, анализ крови на содержание С-пептида, анализ крови на содержание гликозилированного гемоглобина и так далее. Немаловажное значение имеет профилактика этого заболевания, которая включает в себя регулярные физические упражнения, правильное питание, хорошее психоэмоциональное состояние и так далее.И, наконец, были собраны статистические данные о заболеваемости сахарным диабетом в России и Республике Башкортостан.

Ключевые слова: сахарный диабет, методы диагностики, анализы крови, профилактика, статистика.

Relevance

In Russia for 2022 the prevalence of diabetes mellitus is 4%, and the number of patients is 5.7 million people.

By 2030, according to the calculations of the International Diabetes Federation, there will be 500 million people with this diagnosis in the world. Every 10 seconds there are 2 more diabetic patients in the world. That's 7 million a year. Every 10 seconds, 1 person dies from a diabetes-related disease. That's 4 million a year. Diabetes ranks 4th among diseases that cause death.

The purpose of the study

To conduct a statistical analysis of morbidity in Russia, in the Republic of Bashkortostan

Materials and methods of research

In the course of work on the article , such theoretical methods as classification , the method of studying and analyzing literature were used .Currently , diabetes mellitus can be divided into 2 main types: 1) Symptomatic, which develops against the background of disruption of the endocrine glands. 2) True, which, in turn, is divided into diabetes of the first and second types.Type I diabetes (or insulin-dependent) is characterized by insufficient insulin production in the body. Type II diabetes (insulin-independent), in which the cells and tissues of the body become insensitive to insulin, but the hormone content in the body is more than sufficient. Diabetes, which pregnant women suffer from, can be singled out in a separate category. This form of the disease is called gestational diabetes, occurs due to the fact that hormones released during pregnancy block insulin, which leads to insufficient nutrition of cells. Also, depending on the severity of the symptoms, the disease is distinguished by 3 stages: the first (or mild), the second (medium) and the third (severe). The type of compensation of carbohydrate metabolism differs: compensated, subcompensated and decompensated diabetes.

The diagnosis of the disease was studied.Diagnosis of type 1 and type 2 diabetes is facilitated by the presence of the main symptoms: polyuria, polyphagia, weight loss. However, the main method of diagnosing the disorder is laboratory tests: 1. Fasting blood test. The endocrinologist asks the patient to refrain from eating a few hours before bedtime and in the morning, before the study. During the procedure, the specialist treats the finger skin with an antiseptic, makes a small puncture

with a scarifier and collects a small amount of blood in a special container. A sign of diabetes mellitus may be a content of more than 6.5 mmol / l of glucose in the resulting sample; 2. Blood test for the content of C-peptide. The endocrinologist prescribes this study for a reliable assessment of insulin production over a certain period of time; 3. Blood test for the content of glycosylated hemoglobin. The level of this substance indicates the content of glucose in the blood for 3 months, so the doctor prescribes such a test for the primary diagnosis and control of the treatment of diabetes mellitus. The concentration of glycosylated hemoglobin above 6.5% indicates the presence of diabetes mellitus; 4. Blood test performed at any time. Such a study is used to confirm the signs of the disease. The content of more than 10 mmol/l of glucose in several blood samples, regardless of the time of meal, indicates the presence of diabetes mellitus; 5.Load test. The first stage of the study is the standard determination of fasting blood glucose. Then the doctor asks the patient to drink a glass of water with sugar and after 2 hours conducts a second blood test. If the

results of the first test reveal a moderate blood glucose level (up to 6.5 mmol/l), and the second test indicates a significant increase in the indicator (approximately 11 mmol/l), then the diagnosis is confirmed; 1 16 28 6. Urine analysis. Patients with diabetes mellitus have a high glucose content in the urine. In addition, ketone bodies may be present in the patient's urine, indicating a violation of glucose metabolism.

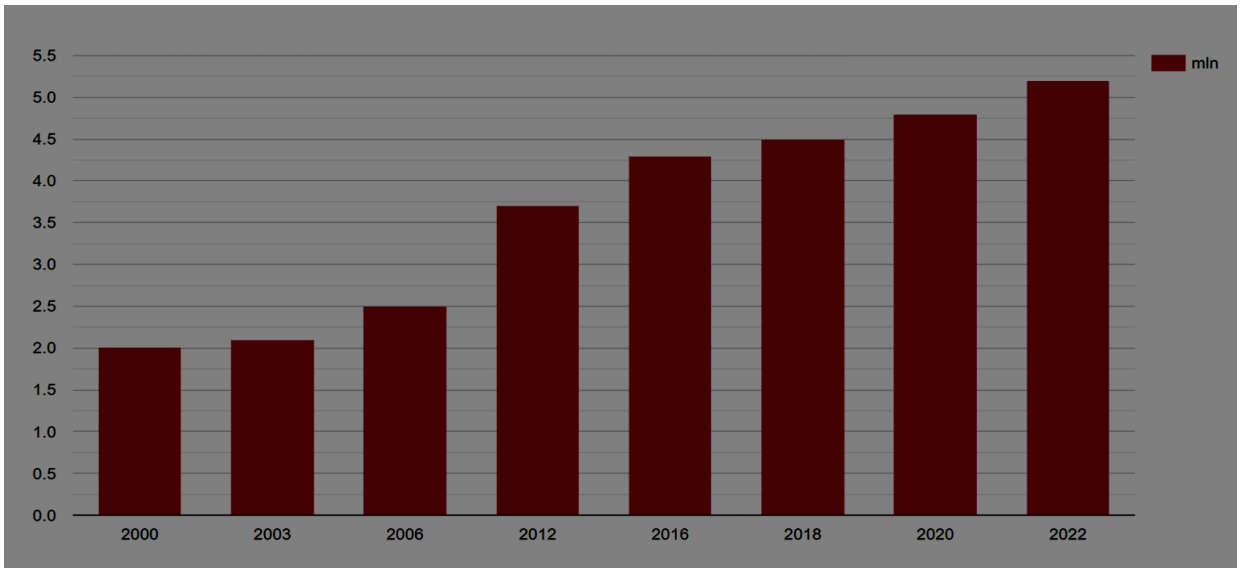
Also, special attention was paid to the study of the prevention of diabetes mellitus, as it is very important today.Even if you or your loved ones fall into a risk group for one of the above reasons, this is not a reason to despair. Modern methods of preventing diabetes will allow you to lead a normal lifestyle — and at the same time significantly reduce the risk of developing this dangerous disease.So, the main methods of preventing diabetes are: 1) Proper nutrition. You need to try to reduce your carbohydrate intake so as not to overload the pancreas (which, recall, secretes insulin), and also reduce the amount of calories consumed daily in order to keep in good shape. To prevent diabetes, it is necessary to minimize or completely remove easily digestible carbohydrates from the menu, such as sugar and any products containing sugar (cookies, unnatural juices). The basis of nutrition should be complex carbohydrates and food including vegetable fibers. In general, the diet should look like this: 60% complex carbohydrates, 20% fats (while 50-70% of them should come from vegetable oils), 20% proteins. Preference should be given to poultry, low-calorie fish, vegetables, unsweetened juices. It is necessary to limit the consumption of pasta and flour products, spicy, spicy and smoked dishes. Fried food should be replaced with boiled, baked or stewed. You can fill the deficit of sweet foods with the help of sweeteners — stevioside will be the best choice. 2) Daily physical activity. Prevention of diabetes mellitus will be effective only if you cut out at least half an hour for physical education every day. Physical activity has a beneficial effect on metabolic processes, thanks to them, the breakdown of fats increases, the fat composition of the blood improves, body weight significantly decreases. To prevent diabetes, doctors advise regularly walking, cycling, dancing, swimming, football and other sports. 3) Maintain mental balance. Since regular stress is one of the causes of the development of the disease, the prevention of diabetes mellitus includes control over the emotional state. It is advisable to communicate as little as possible with negative people, avoid stressful situations. If work constantly requires making difficult decisions, perhaps for the sake of preserving health it should be abandoned. 4) Undergo regular medical examinations. For people at risk, diabetes prevention necessarily includes testing at least once every six months. Informed means armed!

Practical research methods were used in the work , namely, statistical data collection based on the study of scientific literature (analysis of the incidence of diabetes mellitus in Russia for

2000-2022) and the modeling method (creating a graph for clarity).There was also a search for information about the incidence of diabetes mellitus in the Republic of Bashkortostan.So, Every year, more than 300 thousand new cases of diabetes mellitus are detected in Russia.The total number of patients with DM in the Russian Federation in 2000 amounted to 2.043 million people, in 2003 - 2.182 million people, in 2006 -2.534 million people, in 2012 - 3.779 million people, in 2016 -4.348 million people, in 2018 -4.5 million patients (3.1% of the population), at the end of 2020 year -4.8 million patients with diabetes mellitus, of which 265 thousand - with type 1 diabetes and 47 thousand children; by 2022 -5.2 million people, including children — more than 50 thousand (Schedule 1).

Schedule 1

Incidence of diabetes mellitus in Russia for 2000-2022



Conclusion

No wonder scientists are so interested in diabetes mellitus. Currently, it is obvious that diabetes mellitus is the scourge of modernity , since among other non-communicable diseases it stands out not only by the increase in morbidity and frequency, but also by a rapidly increasing risk group. Diabetes mellitus is the punishment of a modern person for poor nutrition, rich in fats and carbohydrates, for the lack of regular training, strong susceptibility to stress,taking unnecessary medications.

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УДК 615.825

Karimova E.I., Nizametdinov U.R.

THE IMPACT OF STRESS ON THE PHYSICAL FITNESS OF SECOND-YEAR STUDENTS OF THE MEDICAL FACULTY OF BSMU

Scientific advisor – N.V. Mezhova
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The work is devoted to the study of the influence of stress on the physical fitness of students. With the help of a questionnaire the main factors of stress and ways to combat it were identified, the consequences of this negative state were analyzed.

***Key words**:* stress, physical fitness, obesity.

Каримова Э.И., Низаметдинов У.Р.

ВЛИЯНИЕ СТРЕССА НА ФИЗИЧЕСКУЮ ПОДГОТОВЛЕННОСТЬ ОБУЧАЮЩИХСЯ ВТОРОГО КУРСА ЛЕЧЕБНОГО ФАКУЛЬТЕТА БГМУ

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Работа посвящена исследованию влияния стресса на физическую подготовленность обучающихся. С помощью анкетирования выявлены основные факторы стресса и последствия данного негативного состояния. Выявлены способы борьбы со стрессом.

Ключевые слова: стресс, физическая подготовленность, ожирение.

Relevance

With the heavy workload in medical schools, students succumb to panic, stress, which is a negative signal for the central nervous system of students. In connection with failure in the educational process, most often undermining of moral and spiritual strength is observed, which leads to actions such as: improper diet (snacks on the run, fast food, malnutrition), as well as important is a long stay in "sitting" a position (factors in the development of varicose veins). All these factors worsen the health of the body. Hypodynamia, reduced immune system of the body negatively affects the ability of students to be resistant to environmental factors, workable and competitive in the conditions of the chosen professional activity. Therefore, it is necessary to pay more attention to health during the stressful period. As far as possible, it is necessary to do sports, walk in the fresh air, thereby increasing adaptability and stress-resistance of the body.

The aim of the paper is to analyze the relationship between stress and physical fitness of medical students. It is necessary to develop measures to prevent stress factors based in the future on the data obtained and it is necessary to increase the active lifestyle of students.

Literature review: This topic has been widely studied in science. At the same time, few analysis has been done with regard to the specifics of medical schools. In humanities, technical and agrarian universities students take a session twice a year, while in medical universities the

curriculum considers a cyclical, intermediate character, conditioned by the intensity of mastering the subjects.

Scientists from Ufa are interested in this question. Studies have been conducted that address the effects of certain sports on stress.

The topic of the influence of adaptation on the psycho-emotional state of students is studied. At the same time, stress at the medical university has been studied in small quantities, which is due to the specifics of training.

Basic: The factor of numerous diseases is a reaction to modern living conditions and lifestyles. Stress and stressful conditions have all the chances to show a stimulating effect, but can also lead to illness. In modern life stress occupies an important place in the life of any person, and also has an impact on behavior and health, the physical condition of the person and his relationship with society depends on the stressful conditions.

The study of writing sources has shown that the word "stress" was introduced by G. Selye in 1936 to denote the interaction of the organism with the surrounding factors. According to G. Sellier, stress is a complex of protective reactions of the body to influences that activate physiological or psychological trauma.

Under the influence of cortisol released due to stress, the craving for 'empty calories' increases repeatedly, this can be sweets, bakery products and so on. Sugar is a simple oligosaccharide instantly absorbed into the bloodstream and broken down to glucose. Glucose is energy. This energy needs to be transported to the cells. This process is controlled by the hormone insulin. The rapid transfer of glucose into the bloodstream generates a surge of insulin, which in a short period of time utilises the glucose and there is a shortage of glucose again. This explains the feeling of hunger one hour after eating a meal or a sweet. This can lead to weight gain. If the weight increases despite the absence of changes in the diet, hormones may be to blame, especially if fat has accumulated directly in the abdominal area. Excess cortisol in the body inhibits metabolism. Constant stress over a prolonged period of time has a negative effect on general health. Cortisol is needed so that the body has the strength to fight illnesses, but its excesses weaken the immune system and make it more susceptible to illnesses. It is advisable not to work out and take a break during this time in order not to get sick.

Stress affects the part of the brain that is responsible for both short-term and long-term memory, and also for working memory. This memory is used for synchronous processing of several pieces of information. This can make even the easiest goals more difficult and means that mental and physical fatigue will increase rapidly

Although stress can have a negative effect on physical fitness, there is a positive side to it: Stress can motivate. A slight increase in cortisol levels due to a little stress can have a positive effect on performance during exercise. The ability to experience difficult periods of life will give the skill of working under pressure. This leads to great determination, for this reason, instead of analysing stress as an obstacle to success, one should try to analyze it as an obstacle from the past, which can certainly be overcome again.

Materials and methods: The prevailing methods in writing this article are analysis and review of current medical literature, survey of 2nd year medical students of BSMU, statistical girls (39%), mean age of respondents was 18.5+20.3 years.

Results and discussion: when designing the questionnaires, all those factors which, according to the students are stressful for them were taken into account and included. The majority of respondents, considered that the main foundation of their negative condition is the lack of time and heavy workload in the learning process (97%). An assessment of the adequacy of nutrition during the study process revealed that most of the respondents eat bland foods (82%), at the same time (14%) take the most balanced meal with them, while the smallest proportion do not eat at all during the study process (4%). Meanwhile, the question on the lifestyle of students mentioned a question, which included: physical exercise outside of university (14%), attendance at sports events (67%), and the question on the duration of a hypodynamic position (96%) was also highlighted.

Conclusions and further perspectives: It can be concluded that a large proportion of students are stressed, which significantly affects overall health and physical fitness in general. On this basis, it can be assumed that stress is directly correlated with physical fitness. Students who are regularly and actively involved in sports are less stressed. General physical fitness plays an important role in preventing overweight and obesity in the student years, and in reducing the risk of physical ill-health in individuals. Active lifestyles were displaced by more sedentary activities, which contributed to lower energy expenditure on physical activity. It is important to consider that basing on the preventive measures special methods can be developed to reduce stress factors in students and to introduce activities on the basics of an active lifestyle that promotes muscle and body tone and reduces the chance of hyperlipidaemia.

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УДК 615.275.4

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THE EFFECT OF MAGNESIUM OROTATE AND MAGNESIUM ASPARAGINATE FORTHE TREATMENT OF CARDIOVASCULAR DISEASES

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The article considers the state of hypomagnesemia as a factor in the manifestation of cardiovascular diseases. The analysis of literature sources describes the positive effect of magnesium orotate and magnesium asparaginate for the treatment of diseases of the cardiovascularsystem.

Key words: hypomagnesemia, magnesium orotate, magnesium asparaginate, cardiovasculardiseases (CVD).

Хабибуллина С.Р.

ВЛИЯНИЕ ОРОТАТА МАГНИЯ И АСПАРАГИНАТА МАГНИЯ НА ЛЕЧЕНИЕ СЕРДЕЧНО-СОСУДИСТЫХ ЗАБОЛЕВАНИЙ

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В статье рассматривается состояние гипомагниемии как фактор проявления сердечно-сосудистых заболеваний. Анализ литературных источников описывает положительный эффект оротата магния и аспарагината магния при лечении заболеваний сердечно-сосудистой системы.

Ключевые слова: гипомагниемия, оротат магния, аспарагинат магния, сердечно-сосудистые заболевания (ССЗ).

The high level of stress caused by the modern rhythm of life, the lack of minerals in food,a diet with an increased level of refined sugar, as well as physical inactivity cause the problem of chronic hypomagnesemia. All of this increase development of cardiovascular diseases.

The purpose of the study

To analyze the effect of magnesium orotate and magnesium asparaginate in the treatment of cardiovascular diseases.

Materials and methods

The material for the study was the scientific publications of Russian and foreignresearchers, and the analysis of literary data was used as a method.

Results and discussions

According to WHO data, diseases of the cardiovascular system are the main cause of human deaths. In addition to hereditary factors, the manifestation of CVD is also affected by lifestyle and the amount of vital nutrients. Magnesium is one of such elements: magnesium ion Mg^{2+} occupies a leading place in providing the vital activity of the cell [3]. However, its deficiency entails a number

of painful conditions, among which are pathologies of the heart and blood vessels (arrhythmias, coronary heart disease, atherosclerosis, hypertension, heart failure, myocardial infarction) [13].

The concentration of magnesium in the blood serum cannot be recognized as a deficiencyof the mineral [3], hypomagnesemia is diagnosed on the basis of clinical manifestations.

Common symptoms include: nervousness, migraines, impaired performance, seizures, arrhythmias, muscle pain [10].

Hypomagnesemia can be of two types: congenital and acquired. Congenital or primary magnesium deficiency is associated with the dysfunction of genes (TRPM6 and TRPM7) responsible for ion transport across the membrane [3]. The causes of secondary magnesium deficiency in the body include impaired reabsorption of the large and small intestines, as well asthe use of substances that reduce the digestibility of the mineral (alcohol, caffeine, tannin, iron, calcium, phosphorus) [1]. Thus, increased consumption of foods containing calcium can lead to hypomagnesemia due to a competitive slowdown in the absorption of two substances. Excessiveoral intake of vitamin D increases the absorption of calcium and, as a result, not only causes magnesium cation deficiency, but also increases the risk of vascular calcification. A high level of stress, in turn, negatively affects the functioning of the TRPM7 gene, leading to a low magnesium content in cells [7]. Magnesium excretion also occurs with increased physical activity and when taking diuretics [13].

A large number of Ca2+ ions provoke the destruction of plasma membranes, but Mg2+ cations reduce the activity of calcium, protecting the cell membrane from damage. This is accompanied by subsequent relaxation and expansion of the vessel walls, which also causes a positive effect of magnesium on the cardiovascular system [7,10]. In addition, magnesium is involved in reducing the formation of blood clots by suppressing the coagulative properties of calcium in the blood [9]. An important role of magnesium is to stabilize the electrophysiology ofthe heart - normalization of the conduction of the pulse of the atrioventricular node, Gis bundles and Purkinje fibers [11]. In other words, magnesium regulates the physiological contractions of the heart muscle, preventing the risk of arrhythmias, heart failure and other pathological conditions.

During the analysis it is necessary to take certain magnesium compounds that have high bioavailability and the ability to act directly on cardiomyocytes for the successful treatment ofCVD. Such forms are magnesium salts of orotate and aspartic acids.

Orotate (orotic) acid — vitamin B13, contained in the serum of dairy products, is an intermediate product of pyrimidine nucleosides necessary for the synthesis of DNA and RNA. Magnesium ions are require to activate the enzyme orotate phosphoribosyltransferase (OPRTase)

involved in the synthesis of pyrimidines [12]. The OPRTase enzyme increases the concentration of uridine nucleotides, which in turn produces high cardioprotective effect of the compound of orotate acid with magnesium [4,14]. Numerous animal experiments prove the effectiveness of the action of orotate acid on the cardiovascular system [14]. In clinical practice, magnesium orotate is used both in standard therapy and in cases of severe diseases: acute heart failure, myocardial infarction [4,14]. It is interesting to note that the intake of magnesium salt of orotate acid has a positive effect on the state of the connective tissue of the heart. In the study in patients with mitral valve prolapse (MVP) during treatment with magnesium orotate, not only normalization of heartrhythm was observed, but also complete or partial disappearance of MVP [4].

Aspartic (aspartate) acid is an organic amino acid synthesized by the body of all mammals. The biological use of asparaginates was evaluated in the mid-1980s as magnesium chelate [14]. Aspartate has a high permeability through the membranes of cardiac cells, thereby effectively transporting magnesium ions. Aspartate acid also activates the synthesis of ATP and increases metabolic processes [8]. When taking magnesium asparaginate preparations, patients experience a decrease in blood pressure, normalization of heart rhythm, as well as a decrease in the focus of ischemic lesion due to a decrease in the ammonium content in cardiomyocytes [5].

However, aspartic acid is an agonist against ionotropic glutamate receptors of the NMDA class, thereby increasing their physiological effect [14]. With an increase in the activity of these receptors, there is a change in the electronic potential in the cell associated with the active release of calcium ions. Then plasma membranes are damaged and the number of free radicals increases, which can lead to the death of brain neurons [2]. In an experiment aimed to assess the toxicity of magnesium compounds with aspartic acid in animals with high doses, there were changes in the heart rate with the appearance of extrasystoles, as well as an increase in the activity of hepatocytes and the amount of protein in the blood, without obvious signs of intoxication of the body [6]. However , the experiment did not reveal the effect of the drug on neurons, which does not guarantee the absence of a side effect of magnesium asparaginate on the receptors of the central nervous system.

Conclusion

Magnesium ion plays an important role in providing the vital activity of the organism, especially in regulating the work and state of the cardiovascular system. Organic compounds of magnesium with acids (aspartic and orotate) contribute to an increase in the bioavailability of magnesium and its successful transport into cell membranes. Also, the chemical property of orotate

acid to participate in the synthesis of pyrimidines determines the cardioprotective effect of magnesium orotate and its successful use in the treatment of cardiovascular diseases.

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ALZHEIMER'S DISEASE

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A study was conducted in the form of a questionnaire among a group of people in the amount of 30 people to determine the proportion and significance of heredity and age in the development of Alzheimer's disease and to obtain data on the more common symptoms of the disease.

The results obtained suggest that heredity and age influence the development of AD, which in turn leads to degenerative disorders.

***Key words*:** Alzheimer's disease (AD), aged people, dementia, memory, neurodegenerative disease.

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БОЛЕЗНЬ АЛЬЦГЕЙМЕРА

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Проведено исследование в форме анкетирования среди группы лиц в количестве 30 человек с целью определения доли и значения наследственности и возраста в развитии болезни Альцгеймера и получения данных о более частых симптомах заболевания.

Полученные результаты свидетельствуют о влиянии наследственности и возраста на развитие БА, что в свою очередь приводит к дегенеративным нарушениям.

Ключевые слова: Болезнь Альцгеймера (БА), пожилые люди, деменция, память, нейродегенеративное заболевание.

Relevance

According to the WHO, there are currently 47 million patients with dementia in the world, and by 2050 the disease will be diagnosed in more than 130 million people. Alzheimer's disease accounts for 60–70% of all dementia cases (28-33 million people). According to studies, in Russia the population of patients with AD is 1 million 248 thousand people. However, less than 10% (less than 124 thousand people) of the estimated number of patients with dementia has been officially registered [7].

Subsequently, the frequency of occurrence of AD in Bashkortostan in different years was revealed.

In the structure of deaths from diseases of the nervous system, according to long-term average data, Alzheimer's disease accounts for 1.04% of all studied nosologies in the Republic of Bashkortostan.

In 2006-2015, 6527 people died from diseases of the nervous system in the Republic of Bashkortostan, which is 0.03% of the total number of deaths [8].

The purpose of the study

To deepen and systematize knowledge of Alzheimer's disease, to determine the role of heredity in the etiology of the disease, to identify the frequency of occurrence of the disease in different age groups.

Materials and methods of research

The subject of the study is Alzheimer's disease and the level of public awareness of the disease. The object of the study: relatives of people suffering from Alzheimer's disease. The volume of observation was 30 people.

Research Methods

The studies were conducted according to the following plan:

1. Theoretical analysis and generalization of research literature data.

2. Copying of data from the questionnaire, statistical processing and analysis of the results obtained.

Theoretical analysis of the research literature was carried out throughout the study.

At the next stage of the study, a copy was made from the results of the questionnaire. The following indicators were studied: the age of people suffering from AD, the influence of hereditary factors on the development of the disease, the frequency of occurrence in Russia and the Republic of Bashkortostan. Statistical processing and analysis of the data obtained, which are clearly presented in tables, was carried out. In the future, a survey of the population was conducted to identify the level of public awareness of AD.

Results and discussion

In the course of the study, having copied data from the results of the questionnaire, it was revealed that in 30 respondents whose relatives suffered from AD, the hereditary factor took place in 18 respondents. The percentage of inheritance of AD was determined.

In the course of working with the results of the survey, the share of hereditary factors from the total number of development of the disease was revealed.

Table 1

The proportion of hereditary factors in the development of the disease

	Absolute number	%
Hereditary factors	18	60
Non-hereditary factors	12	40
Altogether	30	100

Thus, the data presented in table 1 shows that the proportion of hereditary factors among other causes of the development of the disease was 60%. Based on this, it can be concluded that the hereditary factor plays an important role in the development of the disease.

In the course of further research, the age structure of people suffering from AD was revealed. All people are divided into 3 age categories: 55-65 years, 66-79 years, 80 years and older.

Table 2

Age structure of the population with AD

Age Category	Absolute number	%
55-65 years	2	7
66-79 years	21	70
80 years and older	7	23
Altogether	30	100

After analyzing the data presented in Table 2, it can be concluded that a large percentage are people over 66 years old, which is a trend in modern society and indicates the influence of age on the course of the development of the disease.

In the course of further work, the first symptoms of the disease were analyzed. Several answer options were proposed, during which the respondents could choose several answer options.

Table 3

The first symptoms of the disease

Symptoms	Absolute number	%
Memory impairment	26	31
Speech disorders	12	14
Disorientation	14	16
Forgetfulness	23	27
Hallucinations	7	8
Other causes	3	4
Altogether	85	100

Thus, the analysis of the data of Table 3 shows that most often the first symptoms of the disease are manifested in memory impairment (31%) and forgetfulness (27%). The results obtained that most often people suffer from degenerative disorders, which significantly affects the quality of life, reducing it.

Conclusion

An analysis of the literature on the treatment of AD indicates that this problem, despite numerous studies, remains relevant and requires further study. Due to the global trend towards the aging of the population, the number of late-aged people is steadily increasing. Due to vulnerability

to cognitive disorders of older age groups, their functioning deteriorates, the autonomy of the individual decreases, which creates a burden on the microsocial environment and transfers the problem of late dementia from a purely medical plane to the rank of actual social psychological problems of our time. This problem affects entire families, mating with huge physical, moral, financial losses, involves representatives of able-bodied generations.

Currently, there are no highly reliable criteria for the prevention of cognitive impairment and Alzheimer's disease. But there is a cognitive reserve that a person forms in the course of his life. At the same time, it is necessary to more widely introduce into practice the already existing effective methods of therapy and prevention of AD.

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REASONS FOR THE PREVALENCE OF ACUTE PANCREATITIS AMONG STUDENTS OF THE BASHKIR STATE MEDICAL UNIVERSITY

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In our article, we present data from a sociological survey among students of the general medicine faculty, which indicate some factors that can lead to acute pancreatitis**.**

***Key words**:* acute pancreatitis, gastrointestinal disease, student

Ханова И.И., Сунбулатова А.И.

ПРИЧИНЫ РАСПРОСТРАНЕННОСТИ ОСТРОГО ПАНКРЕАТИТА СРЕДИ СТУДЕНТОВ БАШКИРСКОГО ГОСУДАРСТВЕННОГО МЕДИЦИНСКОГО УНИВЕРСИТЕТА

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В нашей статье мы приводим данные социологического опроса студентов лечебного факультета, которые указывают на некоторые факторы, которые могут привести к острому панкреатиту.

Ключевые слова: острый панкреатит, желудочно-кишечные заболевания, студент.

Acute pancreatitis is an inflammation of the pancreas that occurs within hours or days. Currently, this problem is becoming more and more urgent among students, as they are often exposed to stressful situations, drink alcohol and do not watch their diet.

According to statistics, acute pancreatitis occurs among students quite often. In different countries, this problem varies from 3.4 to 27 per 100,000 people in the 18 to 25 age group.

One of the main risk factors is alcohol and drug abuse, which reduce the protective properties of the body, causing inflammation of the pancreas. In addition, pancreatitis can be associated with high cholesterol, smoking, metabolic disorders, and genetic factors.

Acute pancreatitis can lead to serious complications such as infection, allowing you to be more susceptible to other diseases. It also causes a large number of hospitalizations and has a high mortality rate.

Purpose

To identify the causes of acute pancreatitis in students of the general medicine faculty of a medical university.

The tasks are following

1) Conduct a social survey of students and identify their health status.

2) Analysis of the causes of acute pancreatitis.

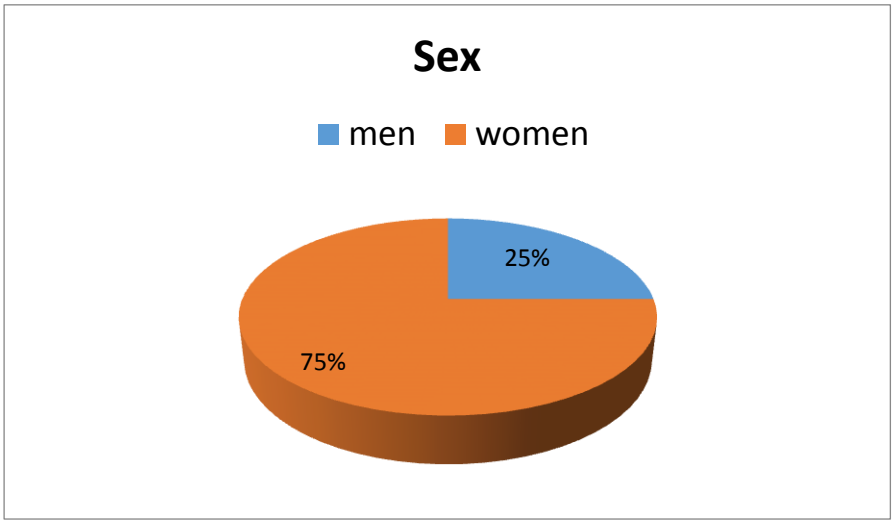
3) Evaluation of aspects influencing the exacerbation of the disease.

Object of study: Students of the faculty of general medicine aged 18-25 years.

The method of research : Sociological survey.

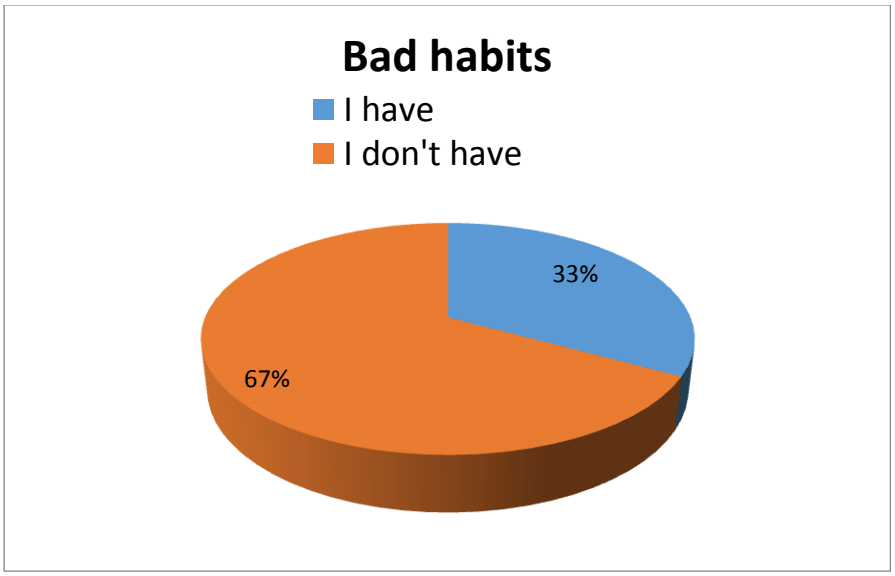
We made some research work and the results are :

Among the respondents: 25% of men and 75% of women (pic. 1.)



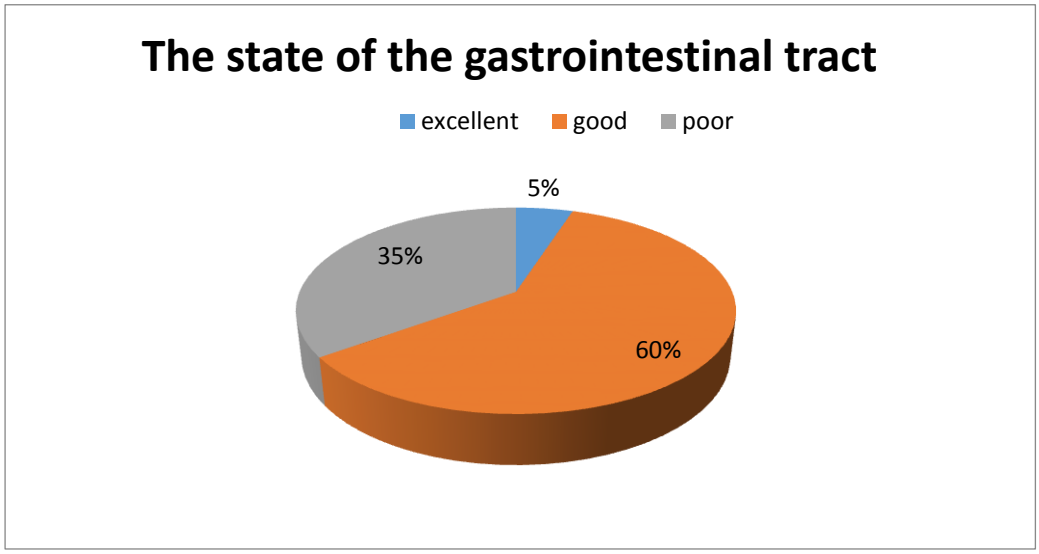
Pic. 1. Sex

Bad habits (pic.2.) : 33% suffer from bad habits 67% respondents do not have bad habits



Pic. 2. Bad habits

The state of the gastrointestinal tract (pic. 3.): 5% are excellent, 60% rated their condition as good, and 35% rated their condition as poor



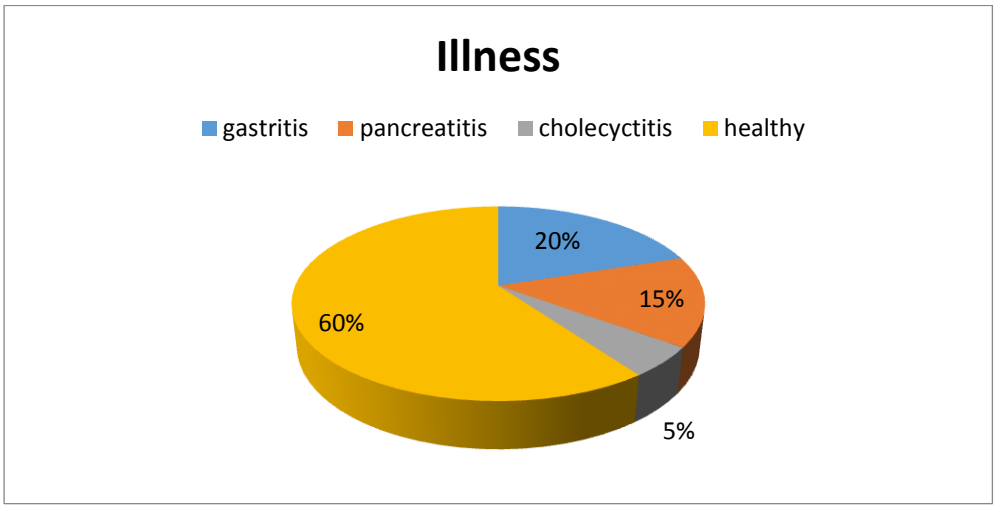
Pic. 3. The state of the gastrointestinal tract

The most common disease among the respondents (pic. 4.) is gastritis 20%

Pancreatitis 15%

Cholecystitis 5%

Healthy 60%



Pic. 4. The most common disease

How often people eat junk food (pic. 5.):

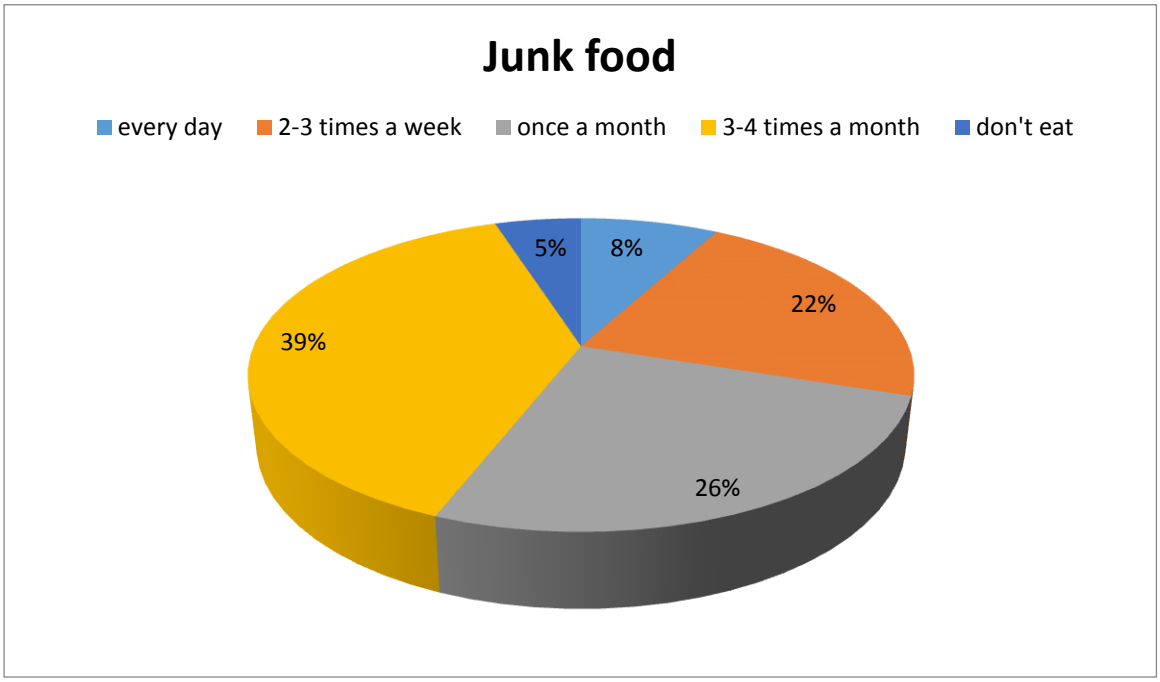
8% of people eat junk food every day

22% 2-3 times a week

26% once a month

39% 3-4 times a month

5% do not eat



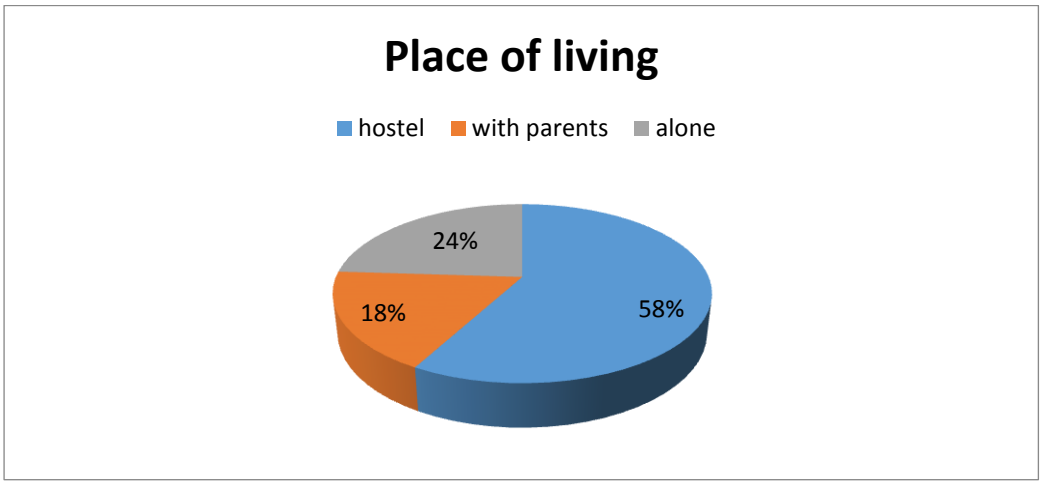
Pic. 5. Junk food

Student's place of living (pic. 6.):

58% of respondents answered that they live in a hostel

18% live with parents

24% live alone



Pic. 6. Place of living

And the conclusion is the following:

1 Gastritis is the most common among students.

2 Bad habits increase the chance of developing acute pancreatitis.

3 Students who live alone are more at risk of developing the disease.

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IRON DEFICIENCY ANEMIA: PATHOGENESIS, RISK FACTORS

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The paper considers the biological role of iron and its metabolism in the body. The iron content in various products is determined, the genetics of iron deficiency states is studied. The main markers of iron metabolism and the mechanisms of their binding to iron are characterized.

Key words: biology, genetics, iron deficiency anemia, markers of iron metabolism.

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ЖЕЛЕЗОДЕФИЦИТНАЯ АНЕМИЯ: ПАТОГЕНЕЗ, ФАКТОРЫ РИСКА

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В статье рассматривается биологическая роль железа и его метаболизм в организме. Определено содержание железа в различных продуктах, изучена генетика железодефицитных состояний. Охарактеризованы основные маркеры метаболизма железа и механизмы их связывания с железом.

Ключевые слова: биология, генетика, железодефицитная анемия, маркеры метаболизма железа.

Relevance: the wide prevalence of iron deficiency anemia (IDA), the heterogeneity of its causes and mechanisms of development.

Purpose of the work: to review the literature on pathogenesis, risk factors and genetic prerequisites for the occurrence of IDA.

Materials and methods: statistical data collection, experiment, comparison, generalization.

Results and discussion: Iron deficiency anemia is one of the most pressing medical problems. Data from the World Health Organization confirm that anemia is in the first place among the 38 most common human diseases. In the world, 24.8% of the population is susceptible to anemia. In Russia, according to the Ministry of Health of the Russian Federation, 15% of the population suffer from anemia. In the Buraevsky district, according to the Central District Hospital, 368 cases were detected among the adult population, 181 among children. In childhood, anemia is accompanied by a delay in mental and physical development, frequent infectious diseases. At an older age, a person feels a decline in physical strength, fatigue and shortness of breath during physical exertion, irritability, difficulty focusing on business. During pregnancy, both the mother suffers at the same time – she has constant weakness, a violation of the heart rhythm, and the fetus – he has a delay in intrauterine development.

Such a variety of manifestations is due to the fact that iron plays a major role in many processes:

1. Iron is a natural oxidizer, helps the blood to saturate organs and tissues with vital oxygen, which is necessary for normal cognitive development and is a natural immune booster

2. iron is involved in the immune function of the body (neutrophils, T cells);

3. iron is involved in the production of ATP;

4. iron synthesizes many enzymes, hormones, amino acids.

Iron enters our body in two forms: as heme iron with animal products and as non-heme iron with herbs, cereals, vegetables and fruits. Heme iron is the iron that is included in the structure of the protein (heme) and has a charge of 2+. It is this chemical feature that determines the good digestibility of heme iron. Non-heme iron, as a rule, has a charge of 3+ and is absorbed worse.

1) The detection of iron ions in various foods was carried out using qualitative reactions with red and yellow blood salt. After conducting a study, the presence of iron in some foods was determined. The precipitation of blue sediment (turnbull blue on Fe^{2+} and Prussian blue on Fe^{3+}) indicates that these products contain iron.

2) The leaders in the amount of iron, as expected, were meat and liver. They contain heme (divalent) iron. Vegetable products contain non-heme (trivalent) iron. The highest iron content of Fe^{3+} is found in sesame, dried apricots and cereals. The lowest iron content of Fe^{3+} was observed in apples, thereby destroying the myth that apples have a high iron content.

The use of molecular genetic methods allowed us to penetrate into the field of iron metabolism and reveal the most subtle mechanisms of its cellular movement. It has been proved that the transport of iron consists of two stages: "import" and "export". Import is the process of iron incorporation into the cell, export is the release from the cell and its subsequent use in other organs. Before entering the cell, the gland has to pass through two lipid bilayers: the intestinal mucosa and the cell membrane. Further transportation of iron is associated with special proteins involved in iron metabolism. Nowadays, more than 20 such proteins have been identified, the main ones among which are transferrin, ferritin, transporter proteins (DMT 1, ferroportin), ferroxidases and hepcidin. Let's get to know them better.

Transferrin is the main iron carrier protein in blood plasma. It is formed from 679 amino acids in the liver during digestion. Iron, which comes with food or with the destruction of red blood cells, binds to transferrin and is transferred to organs and tissues. Iron not included in ferritin during absorption is transferred through the cells of the mucous membrane of the small intestine and appears in the blood plasma in the form of a trivalent element associated with transferrin

Ferritin is an intracellular protein that stores iron and releases it as needed. Ferritin is present in the body of all vertebrates and invertebrates, as well as in plants and bacteria. This prevalence of this iron-containing protein indicates the biological versatility and important functional role that ferritin performs in the body. Ferritin is a large-molecular protein, consists of apoferritin, covering the core of iron hydroxyphosphate with a shell. Each ferritin molecule can accumulate up to 4,500 iron atoms, which comes out of ferritin in a divalent form. The F level can serve as an indicator of tissue iron reserves only in the absence of infectious-inflammatory, tumor and destructive processes in the body.

The level of ferritin in the blood serum normally varies widely — from 20 to 300 mcg /l. Optimal indicators are considered from 40 to 150 mcg / l — for men and 40 to 100 mcg / l — for women. The level of ferritin in the blood serum reflects the iron reserves in the body, since 1 mcg/ l of it corresponds to 8 mg of deposited iron

Ferroportin is a protein that provides iron output from cells (macrophages, enterocytes, hepatocytes). Disruption of the function of this protein will lead to the accumulation of iron ions inside the cell, since ferroportin is the only exporter of iron.

Ferroxidases - oxidize divalent iron into trivalent iron, which is necessary for the inclusion of iron ions in the transforming growth factor. The protein hephestin, expressed on the surface of enterocytes, is involved in the absorption of dietary iron. The second protein, eruloplasmin, circulates in plasma and participates in iron recycling

Hepcidin is a low molecular weight hormone, consists of 25 amino acids, regulates extracellular iron concentration and has antibacterial and antifungal activity. The peptide is visually similar to a "hairpin", 2 cysteines of which are connected by disulfide bridges in a ladder-like configuration.The mechanism of action of hepcidin consists in disabling the function of ferroportin, as a result of which the output of iron from cells is suppressed: enterocytes, macrophages and hepatocytes. Excess iron causes the synthesis of hepcidin hepatocytes. That is, hepcidin is a universal humoral regulator of iron metabolism

PATHOGENESIS

The predominant consumption of iron over intake is the cause of iron deficiency anemia, manifested in various conditions or diseases: large blood loss, increased need for iron (during growth or pregnancy, lactation), impaired iron absorption, congenital iron deficiency. .Among other reasons, there is insufficient intake of iron from food, especially at an early age; violations of iron absorption processes (in intestinal pathologies); More rare causes include hypoproteinemia, in

which the concentration of transferrin decreases, which leads to a violation of iron transport. Iron deficiency anemia refers to dyserythropoietic anemia due to iron metabolism disorders

Conclusion and conclusions

Iron belongs to vital trace elements, as it participates in the process of cellular respiration; lack of iron in the body is the cause of iron deficiency anemia; the human body does not synthesize iron, because of this it must come with food; iron received from food is absorbed only partially; heme iron is absorbed much better than non-heme iron.

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GALLSTONE DISEASE: ETIOLOGY, EFFECTIVENESS OF TREATMENT

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The purpose of the article is to consider the etiology, diagnosis of gallstone disease, as well as methods of treatment and their effectiveness at various stages of the disease.

Key words: cholelithiasis, gallstones, ursodeoxycholic acid.

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ЖЕЛЧНОКАМЕННАЯ БОЛЕЗНЬ: ЭТИОЛОГИЯ, ЭФФЕКТИВНОСТЬ ЛЕЧЕНИЯ

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Цель статьи заключается в рассмотрении этиологии, диагностики желчнокаменной болезни, а также методы лечения и их эффективность на различных стадиях заболевания.

Ключевые слова: желчнокаменная болезнь, желчные камни, урсодезоксихолевая кислота.

Gallstone disease (GSD) is rightfully recognized as one of the most common diseases and is second only to atherosclerosis in this sad statistics, leaving behind peptic ulcer of the stomach and duodenum and currently GSD is one of the most frequent and economically significant medical problems in industrialized countries all over the world. This is primarily due to the development of technology, which leads to a sedentary lifestyle, which increases the risk of stone formation.

Currently, despite the study of this disease, there are many unclear points in the etiology and pathogenesis of gallstone disease. Therefore, the purpose of this research work is to consolidate knowledge on the diagnosis and treatment of gallstone disease and to determine the features of the modern course and diagnosis.

The main task in this topic is to consider the etiology and pathogenesis of cholelithiasis, to diagnose and study the criteria for diagnosis, to consider the basic principles of planned rational therapy.

Gallstone disease (GSD) is a disease of the hepatobiliary system caused by a violation of the metabolism of cholesterol and / or bilirubin, characterized by the formation of gallstones in the gallbladder, hepatic bile ducts or in the common bile duct. Most gallstones form in the gallbladder

What factors contribute to the development of gallstone disease?

•Floor. According to statistics, women get sick 2-3 times more often than men. Pregnancy and childbirth also increase the chance of developing this disease.

•Age. The risk of developing the disease increases every year by 1% in women, and 0.5% in men

• Hormonal disorders.

• Chronic inflammatory diseases of the biliary tract.

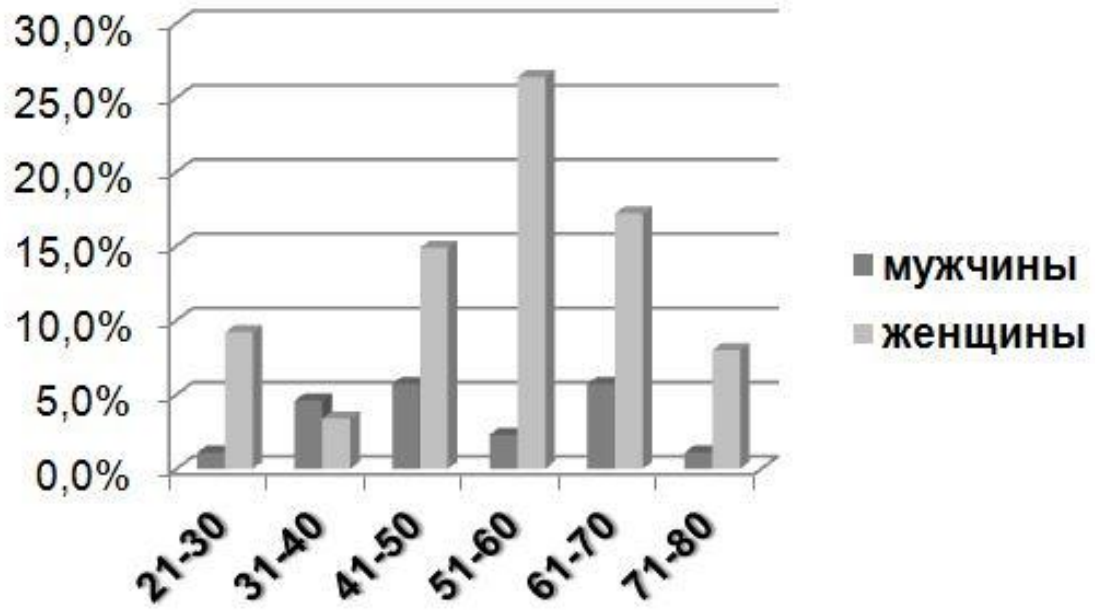
• Violation of lipid metabolism.

• Hereditary predisposition.

•Anatomical changes in the biliary system.

• Excess food with a predominance of fatty foods.

• Functional biliary disorders.



Stages of gallstone disease:

Stage I - initial or prestone

At this stage, it is possible to detect thick heterogeneous bile in the gallbladder, the formation of biliary sludge, the presence of putty bile, the combination of putty bile with microliths. If you skip treatment at this stage, the formation of gallstones begins.

Stage II - formation of gallstones

At this stage, the examination reveals the presence of gallstones:

in the common bile duct, in the gallbladder, in the hepatic ducts;

by the number of stones: single, multiple;

composition: pigment, cholesterol, mixed;

Stage III - chronic recurrent calculous cholecystitis

With frequent exacerbations of the disease, a joint consultation of a surgeon and a gastroenterologist - hepatologist is indicated to resolve the issue of surgical treatment and special preparation for surgery.

Stage IV - complications

A joint consultation of a surgeon and a gastroenterologist-hepatologist is shown.

Symptoms

Very often, especially in the initial stages, cholelithiasis does not make itself felt and does not disturb the patient. In more than half of patients, gallstones are discovered incidentally during examinations for other diseases.

Minimal manifestations of gallstone disease:

– heaviness in the abdomen (heaviness in the right hypochondrium)
– nausea
– belching
– constipation
– flatulence

Gallstone disease develops slowly over years. Her symptoms increase gradually. For several years, you may feel heaviness in the right hypochondrium after eating (especially when eating fatty, fried meat, smoked, salty, pickled foods, as well as wine). In the future, nausea, vomiting and a sharp sharp cramping pain in the right hypochondrium - hepatic colic can join the unpleasant sensations.

Diagnostics

- Clinical blood test.
- Biochemical blood test (level of liver enzymes - ALT, AST, bilirubin, blood protein, alkaline phosphatase, control of cholesterol, very low, low and high density lipoproteins, triglycerides).
- Magnetic resonance cholangiopancreatography .
- Dynamic hepatobiliary scintigraphy .
- Survey radiography of the abdominal cavity.
- Endoscopic retrograde cholangiography .
- Endoscopic ultrasound examination of the pancreato-biliary zone.

Treatment of gallstone disease

Treatment tactics depend on the stage of the disease

The most effective method of treatment is treatment in the early stages, when the disease can be controlled by both non-drug (regime, diet) and drug treatments.

An effective medical treatment for gallstone disease is litholytic therapy. When choosing indications, it is necessary to take into account the structure, size and number of stones in the gallbladder, which is one of the most important conditions for successful therapy. Best results are achieved with UDCA at a dose of 10–15 mg/kg/day daily at night. Calculi with a diameter of less than 5 mm can completely dissolve in almost 80% of cases, with a calculus size of more than 10 mm, the effectiveness of treatment decreases by about 30%. Stones larger than 15 mm dissolve very slowly or do not dissolve at all.

Selection criteria for patients with cholelithiasis for litholytic therapy with UDCA

1. Homogeneous structure of the calculus.

2. Rounded or oval calculus.

3. The size of the calculus is not more than 10–15 mm.

4. The volume of calculi is not more than 1/3 of the volume of the gallbladder on an empty stomach.

5. Cystic and common bile duct, free from stones.

In accordance with the indicated criteria for conservative therapy, out of 100 patients with cholelithiasis, after a course of litholytic therapy, calculi will dissolve in 26% of patients. Partial dissolution and the absence of further dynamics of litholysis is 23% and 50.6%.

In the later stages, there is a high risk of developing serious complications that can lead to disability or even death. At these stages, surgical treatment is inevitable.

The main treatment for end stage cholecystectomy is laparoscopic cholecystectomy (using 4 ports), which is performed in 93% of all cholecystectomy. According to certain indications, open cholecystectomy, mini-laparotomic cholecystectomy (incision less than 8 cm) is also performed, extremely rarely - percutaneous cholecystolithotomy, cholecystostomy (in high-risk patients). In recent years, new methods have begun to be applied: laparoscopic cholecystectomy with 1 port, endoscopic surgery through transvaginal access.

It is important to note that in 10-15% (according to some reports, up to 40%) of patients after cholecystectomy, symptoms persist or reappear or the functions of other digestive organs are impaired.

Conclusion

In the structure of the incidence of the population of the Republic of Bashkortostan, diseases of the gallbladder and biliary tract are characterized by a high prevalence and tend to increase,

which indicates the medical and social significance of this pathology and the need to develop therapeutic and preventive measures to improve the quality of medical care for patients.

A comprehensive study of the structure and chemical composition of gallstones and the development of a model for their formation opens up prospects for studying the processes of dissolution of gallstones under the influence of chemical agents in order to obtain new technologies for the treatment of cholelithiasis.

When examining patients with pathology of the gallbladder and biliary tract, it is necessary to take into account the main constant and variable risk factors for gallstone disease in order to select a more effective method of treatment.

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УДК 618

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CAUSES OF MALE INFERTILITY

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Male infertility is a pathology in which the sperm cells cannot fertilize a woman's egg, resulting in pregnancy failure. It can be caused by genetic disorders, bad habits, infections, stress or diet.

Key words: infertility, causes of infertility, hormonal imbalance, genetic disorders, environmental factors, bad habits, diet, stress, infections

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ПРИЧИНЫ МУЖСКОГО БЕСПЛОДИЯ

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Мужское бесплодие — это патология, при которой сперматозоиды не могут оплодотворить яйцеклетку женщины, что приводит к прерыванию беременности. Это может быть вызвано генетическими нарушениями, вредными привычками, инфекциями, стрессом или диетой.

Ключевые слова: бесплодие, причины бесплодия, гормональный дисбаланс, генетические нарушения, факторы окружающей среды, вредные привычки, диета, стресс, инфекции.

Currently, the problem of male infertility is urgent and widespread throughout the world. According to statistics, every fifth guy faces this problem during his life. Many people think that a woman is unable to conceive because of her body disorders. However, it is often a problem in men. There are many factors that can affect sperm quality and a couple's ability to conceive. In this article, we will look at the main causes of male infertility and how they affect the health of the father-to-be and his offspring. We will also discuss possible treatments and prevention of these causes to keep the man healthy and help him conceive.

OVERVIEW OF MALE INFERTILITY

Male infertility is a condition that affects many men around the world and can be caused by various factors. Infertility in men refers to the inability of a man to impregnate his partner despite having regular unprotected sexual intercourse. The condition can be caused by several factors such as hormonal imbalances, genetic abnormalities, infections, lifestyle choices, and environmental factors.

Hormonal imbalances such as low levels of testosterone or high levels of prolactin can affect male fertility. Genetic abnormalities like Klinefelter syndrome and Y chromosome microdeletions

are also common causes of male infertility. Infections such as chlamydia and gonorrhea can affect sperm production leading to infertility.

Lifestyle choices such as smoking, excessive alcohol consumption, drug abuse, and poor diet are also known to contribute to male infertility. Environmental factors like exposure to radiation, toxins, pesticides, and heavy metals can also reduce sperm count and motility leading to infertility.

GENETIC CAUSES OF MALE INFERTILITY

One of the leading causes of male infertility is genetic disorders. Some men may be born with abnormalities in the composition of their chromosomes such as Klinefelter syndrome or Schereshevsky-Turner syndrome, which may result in low sperm counts or no sperm at all. Some cases of infertility are also associated with defects in the genes responsible for sperm production or transport.

In addition, male genes can also affect the development of diseases, which in turn cause infertility. For example, the genes responsible for regulating testosterone and other male hormone levels may be related to prostate health and the body's ability to produce sperm.

Other factors can also affect the likelihood of genetic disorders in offspring. These can be related to the age of the father, smoking, alcohol or drug use, and certain medical conditions. It is important to remember that genetic causes of infertility usually have no cure and can be passed from one generation to the next.

ENVIRONMENTAL FACTORS CONTRIBUTING TO MALE INFERTILITY

Environmental factors can play a significant role in male infertility. Exposure to various chemicals and toxins in the environment may affect sperm production and function, leading to decreased fertility. Chemicals found in pesticides, plastics, and other industrial products have been linked to lower sperm counts and poor semen quality.

Exposure to heavy metals such as lead, cadmium, and mercury can also negatively impact male fertility. These metals can accumulate in the body over time and damage sperm cells. Additionally, environmental pollutants like air pollution and radiation may contribute to infertility by damaging DNA or disrupting hormone levels.

Lifestyle choices such as smoking, excessive alcohol consumption, and drug use can also lead to male infertility.These habits can cause hormonal imbalances that affect sperm production or damage the reproductive organs over time.

Overall, it is important for men to be aware of their exposure to environmental toxins and make efforts to reduce their risk of exposure. Maintaining a healthy lifestyle through exercise, proper

nutrition, avoiding harmful habits like smoking or drug use, and limiting exposure to environmental pollutants may help improve male fertility outcomes.

LIFESTYLE CHOICES AND MALE INFERTILITY

Lifestyle choices can play a significant role in male infertility. Smoking, excessive alcohol consumption, and drug use can all have negative effects on sperm count and quality. Obesity and a sedentary lifestyle can also contribute to infertility by reducing testosterone levels.

Diet is another important factor to consider. A diet high in processed foods and refined sugars can lead to hormonal imbalances, which may affect sperm production. On the other hand, a diet rich in fruits, vegetables, whole grains, and lean protein sources may promote healthy sperm production.

Stress is another potential contributor to male infertility. Chronic stress can interfere with hormone production and affect sperm quality. Engaging in stress-reducing activities such as exercise or meditation may help alleviate this issue.

Finally, exposure to environmental toxins such as pesticides and chemicals found in plastics may also negatively impact male fertility. Limiting exposure to these toxins through proper protective gear or avoiding certain products may help reduce the risk of infertility.

Overall, making positive lifestyle choices such as maintaining a healthy diet and exercising regularly while avoiding smoking, excessive alcohol consumption, drugs and environmental toxins can improve chances of fertility for men.

MEDICAL CONDITIONS AND TREATMENTS AFFECTING MALE FERTILITY

There are several medical conditions and treatments that can affect male fertility. Some of the most common medical conditions include varicocele, infections, hormonal imbalances, and erectile dysfunction. Varicocele is a condition in which the veins in the scrotum are enlarged and can lead to reduced sperm production. Infections such as gonorrhea or chlamydia can damage the reproductive tract and affect sperm count and quality. Hormonal imbalances such as low testosterone levels can also have an impact on male fertility.

Certain treatments for medical conditions can also affect male fertility. Chemotherapy and radiation therapy used to treat cancer can damage sperm cells and reduce their ability to fertilize eggs. Certain medications used to treat high blood pressure or depression may also have an impact on male fertility.

It is important for men who are experiencing infertility issues to discuss any medical conditions or treatments they may be undergoing with their doctor. In some cases, treating the underlying condition or adjusting medication dosages may improve fertility. Additionally, there are

assisted reproductive technologies available that can help couples conceive despite male infertility issues.

CONCLUSION

In conclusion, male infertility is a complex condition that has several contributing factors. Understanding the causes of male infertility is crucial in developing effective treatment plans for couples struggling with conception. Seeking medical advice from qualified healthcare practitioners is recommended for couples experiencing difficulties in conceiving.

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УДК 616

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STOMACH CANCER

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Gastric cancer and its clinical picture, causes, frequency of occurrence in Bashkortostan, how dangerous is stomach cancer.

Key words: stomach cancer, mortality, clinic, diagnosis, prognosis.

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Рак желудка и его клиника, причины возникновения, частота встречаемости в Башкортостане, насколько опасен рак желудка.

Ключевые слова: рак желудка, смертность, клиника, диагностика, прогноз.

Relevance

Gastric cancer is an extremely urgent problem of modern oncology. Every year in the world, stomach cancer affects about 1 million people and over 700,000 deaths from this disease.

The purpose of this scientific work is to deepen and systematize knowledge on the disease of SC, to determine cause of the disease, diagnosis. To identify the frequency of the disease in men and women.

The purpose of the study

To deepen and systematize knowledge of stomach cancer disease.

Materials and methods of research

The subject of the study is stomach cancer. The object of the study: relatives of people suffering from stomach cancer.

Research Methods

The studies were conducted according to the following plan:

1. Theoretical analysis and generalization of research literature data.

2. Copying of data from the questionnaire, statistical processing and analysis of the results obtained.

Theoretical analysis of the research literature was carried out throughout the study.At the next stage of the study, a copy was made from the results of the questionnaire. The following

indicators were studied: frequency of occurrence in Bashkortostan. Statistical processing and analysis of the data obtained, which are clearly presented in tables, was carried out.

Results and discussion

Gastric cancer is a malignant tumor of the stomach that develops from epithelial tissue

For many years, gastric cancer has occupied the first place in the structure of malignant diseases. In recent decades, the incidence and mortality from gastric cancer have been declining, primarily in economically developed countries. This trend is largely due to changes in diet in these countries and, to a lesser extent, progress in the timely diagnosis of the disease and improvement of treatment methods. The basic method of treatment of this disease remains surgical, and the improvement of treatment results is connected with wide excision of lymph nodes of upper abdominal cavity. In patients with advanced tumor process methods of complex treatment are developed. Nevertheless, a number of questions are far from being solved. First of all it concerns the timely diagnostics of stomach cancer. Unfortunately, in the majority of initially diagnosed patients widespread forms of tumor process are diagnosed, which predetermines the dissatisfaction with the results of treatment. At the same time late diagnostics is conditioned not only by asymptomatic or low-symptomatic course of the disease, but also by diagnostic mistakes, underestimation of changes existing in a patient. In the course of his work a doctor of any specialty may come across patients with gastric cancer more than once. Knowledge of the clinical of the disease, comprehension the pathogenesis of the development of symptoms, ways of developing gastric cancer, an idea of the optimal tactics in each specific observation are decisive in this case. Therefore, doctor of any specialty must know and be able to: predisposing factors, precancerous conditions and diseases of the stomach; symptoms and clinical picture depending on the form of growth and localization of the tumor; methods of examination of patients; principles of treatment. To be able to collect the anamnesis of a patient with gastric cancer. On the basis of complaints, anamnesis and data of physical examination to suspect stomach cancer. To outline a plan of examination in case of suspected stomach cancer, to make a differential diagnosis and to refer the patient to a specialized medical institution.

Currently, gastroenterology does not know enough about the mechanisms of development and causes of stomach cancer. The current theory of the development of gastric cancer suggests that Helicobacter pylori infection plays a significant role in its occurrence. Among the risk factors are the following: smoking, chronic gastritis, stomach surgery, pernicious anemia, genetic predisposition. Conditions with a high risk of developing cancer are gastric adenoma, atrophic

gastritis, chronic stomach ulcer. Most often cancer develops in men. However, the absence of risk factors does not guarantee complete avoidance of gastric cancer.

Clinical symptoms in gastric cancer can be divided into general symptoms (general weakness, progressive weight loss, loss of appetite, nausea, anemia, epigastric pain) and symptoms in connection with localization, form of tumor growth, metastasis. When the tumor is localized in the cardioesophageal region, dysphagia, with cancer of the antrum of the stomach with pyloric stenosis - nausea and vomiting of food eaten. Ulcerated cancer is more often complicated by bleeding and perforation, diffuse-infiltrative cancer, leading to a decrease in the volume of the stomach, is accompanied by a feeling of fullness after taking a small amount of food.

Cancer stomach can interfere with digestion by preventing food from passing into the lower digestive tract. A cancerous tumor grows into the wall of the stomach, can spread to other organs - grow into the large intestine, pancreas, liver. If the tumor is located near the esophagus, it may spread into it and interfere with the passage of food into the stomach. As a result of all this, weight loss to exhaustion. The tumor can spread through the lymphatic and blood vessels to other organs (liver, lungs, brain, bones, etc.), where it gives foci of growth (metastases). As a result, death occurs.

The frequency of occurrence of the disease in Bashkiria. Comparative characteristics of stomach cancer in men and women.

Malignant neoplasms (MNs) represent a serious problem for Russian public health. The increase in the incidence and mortality of the population from MN leads to significant socio-economic losses not only in Russia, but also in other countries of the world. So, according to the data announced at the IX Congress of Oncologists, in the structure of mortality, cancers in Russia, despite the achievements of recent years in oncology, occupy the 2nd place, second only to diseases of the circulatory system. In this regard, the control of MN is a paramount task, in the light of the improvement of the demographic situation in Russia, this will contribute not only to a decrease in mortality, but also to an increase in the life expectancy of Russians. The organization of oncological care in modern conditions is based on a systematic analysis of the dynamics of morbidity and mortality from malignant neoplasms, which makes it possible to make scientifically based decisions on the provision of specialized oncological care to the population. Situational Analysis of Actual Statistics for 2018–2020 allows to assess the real picture of morbidity and mortality from malignant neoplasms in Ufa.

In 2020, in Ufa, 3286 patients with newly diagnosed MN were registered, which is 277 cases more than in 2018. (2018 - 3624 people, 2019 - 3901 people). Thus, the incidence of MN in

Ufa for 2020 amounted to 288.2 per 100 thousand population. As can be seen in Fig. 1, the incidence rate is lower compared to 2019 by 16.2% (2018 - 352.8; 2019 - 343.6 per 100 thousand population). In the Republic of Belarus, the incidence rate of MN over three years decreased to 273.4 per 100 thousand of the population, and became lower by 5.2% compared to that in Ufa.

Analyzing statistical data for the city of Ufa for 2020. It was found that in the structure of primary incidence of MN according to nosology, the ranking places are occupied by: mammary gland — 17.4% (513 patients); skin - 11.3% (334 patients); colon - 9.6% (284 patients); lung — 9.2% (272 patients); rectum - 6.9% (203 patients); prostate — 8.6% (197 patients); stomach - 6.4% (188 patients).

For the period from 2018 to 2020 in Ufa, there is an increase in the incidence of cancer: the esophagus, stomach, colon and rectum, cervix, thyroid gland.

Tabl. 1

Localization of the tumor

	2018		2019		2020	
	abs.number	specific gravity	abs.number	specific gravity	abs.number	specific gravity
Total	3624	100	3563	100	2955	100
Stomach	192	5,3	176	4,9	188	6,4

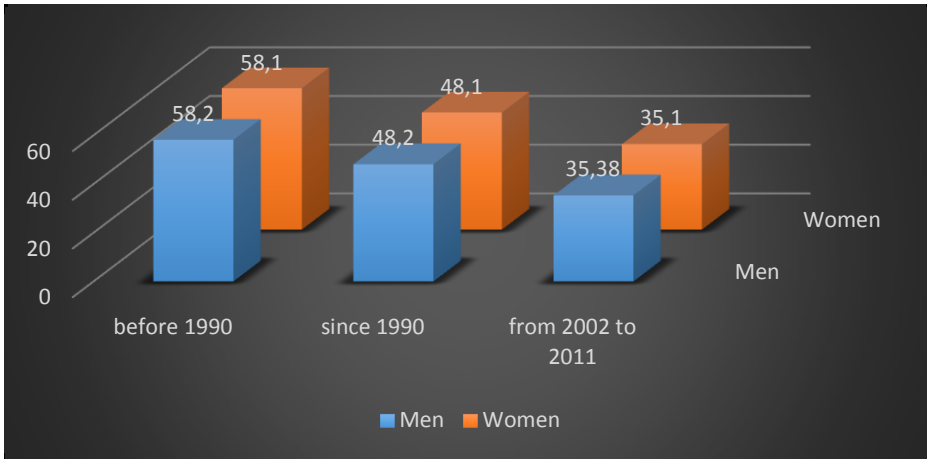

Fig.1. The incidence (in thousands) of stomach cancer in Russia in different years.

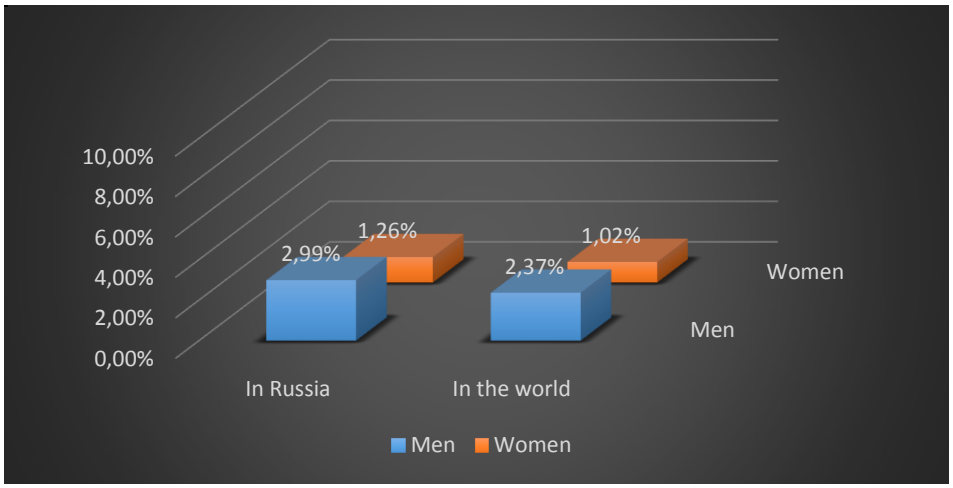

Fig.2. The risk of developing stomach cancer in the population during life (0-74 years) in 2011.

Conclusion

Gastric cancer ranks fifth in terms of incidence and 3rd in structure of mortality from malignant neoplasms. There is a geographical heterogeneity of incidence with a maximum level in Japan, Russia, Chile, Korea, China, minimum - in the USA, Australia, New Zealand. Men get sick 1.3 times more often than women, the peak incidence occurs at the age of 65 years.

Despite a slight decrease in the incidence of gastric cancer, primarily in the economically developed countries of the world, gastric cancer continues to occupy one of the leading places in the structure of oncological diseases and the cause of death. The results of gastric cancer treatment (immediate, long-term, functional) directly depend on its timely recognition and clarification of the extent of the tumor process, which allows choosing the optimal treatment tactics. There are several reasons for the late detection of gastric cancer: the absence of criteria for the formation of risk groups for the population, the absence of characteristic complaints in the early stages of the disease and, accordingly, the late appeal of patients, insufficient technical equipment of medical institutions, and difficulties in interpreting instrumental data.

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УДК 616

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HYPODYNAMIA AS A FACTOR IN THE DEVELOPMENT OF OBESITY

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Physical health is a state of the body in which the functions of all organs and systems are balanced, there are no pathological changes in their functioning. In many ways, a stable level of physical health depends on a person's lifestyle, his physical activity during life, daily motor actions, compliance with the regime of work and rest.

Key words: hypodynamia, obesity, overweight, low physical activity.

Мухаметзянова А.А., Хасанова Ю.Ф.

ГИПОДИНАМИЯ КАК ФАКТОР РАЗВИТИЯ ОЖИРЕНИЯ

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Физическое здоровье – это состояние организма, при котором функции всех органов и систем сбалансированы, отсутствуют патологические изменения в их функционировании. Во многом стабильный уровень физического здоровья зависит от образа жизни человека, его двигательной активности в течение жизни, ежедневных двигательных действий, соблюдения режима труда и отдыха.

Ключевые слова: гиподинамия, ожирение, лишний вес, низкая физическая активность.

Despite the popularization of a healthy lifestyle and an ideal body, according to WHO, at least a quarter of the world's population suffers from hypodynamia. Pathology ranks fourth in the list of causes of early mortality from cardiovascular diseases.[5]

Hypodynamia is called the "disease of civilization", since its main causes are urbanization and a decrease in physical activity in the population.

Relevance

Issues of a healthy lifestyle are now the most relevant not only for representatives of student youth, but also for the whole society as a whole. However, being representatives of mental labor, students increasingly switch to less motor activity. Lectures, practical classes, work at the computer - all this leads to the development of hypodynamia in students, which was nicknamed the "disease of civilization" [2,3].

Objectives of the work

- to study the effect of physical activity on the physique

- determine whether obesity is a problem of BSMU students, and whether it is associated with physical inactivity

Hypothesis

Hypodynamia in BSMU students is associated with the predominance of their mental activity and a decrease in physical exertion

Tasks

- made phesical activity test
- measure subcutaneous fat in subjects
- study statistics on obesity in the Russian Federation and the Republic of Bashkortostan
- study the literature on the topic.

Results and discussion

According to Rosstat, in 2018, only 36.3% of Russians over 19 years old did not have any problems with excess or insufficient weight. 40.1% are overweight people, 21.6% are obese, in absolute numbers it is 45.8 million and 24.5 million people, respectively. The deficit of body weight is observed in 1.4% of Russians [1].

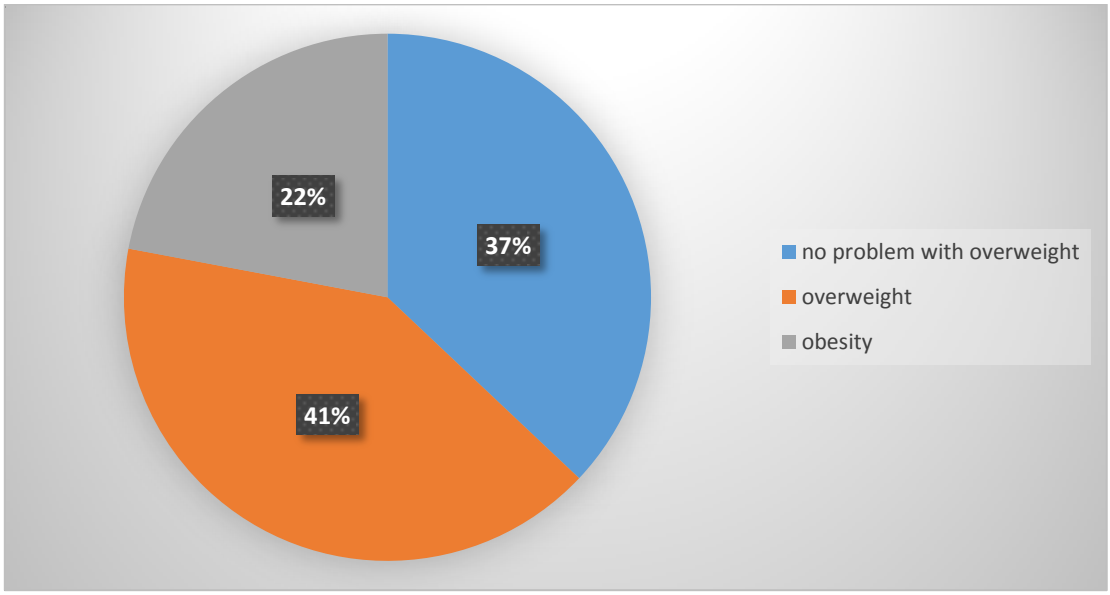

Figure 1. obesity statistics in Russia

In the Republic of Bashkortostan, according to Rosstat for 2018, 61.4% of the population is obese. We did a physical activity test questionnaire (table 1) and measured subcutaneous fat in the subjects, and based on these results, we made Table 2.

Table 1

Physical activity test questionnaire

№	Question	Answer	Score
1.	How many times a week did you intense p	___days	= number of days
2.	How long does your intense physical activity usually last?	up to 10 minutes 10-20 min 20-40 min 40-60 min 1 hour or more	0 1 3 5 7
3.	How many times a week do you do non-intensive physical activity?	___days	= number of days
4.	What is the usual duration Your non-intensive physical activity during the day?	up to 20 minutes 20-40 min 40-60 min 60-90 min 1.5 hours or more	0 1 3 5 7
5.	How many days a week do you walk?	___days	= number of days
6.	What is the usual duration Your hiking during the day?	up to 20 minutes 20-40 min 40-60 min 60-90 min 1.5 hours or more	0 1 3 5 7
7.	How many hours do you usually spend in	8 hours or more 7-8 h 6-7 h 5-6 h 4-5 h 3-4 h 3-1 h less than 1 hour	0 1 3 4 5 6 7 8

Scores:_____(<21 = hypodynamia)

Table 2

Test and measurments results

Participants	subcutaneous fat fold of the biceps, cm	subcutaneous fat of the triceps, cm	subcutaneous fat under the shoulder blade, cm	subcutaneous fat of the abdomen, cm	results of physical inactivity tests	percentage of body fat, %
1. R.A.	1	8	0,9	0,6	Standard	19,8
2. F.A.	1,9	1,6	1,5	1,4	Hypodynamia	30,2
3. D.M.	2,25	2	1,7	1,9	Hypodynamia	29,1
4. C.V.	0,35	0,8	1,25	1,25	Hypodynamia	16,3
5. G.P.	0,45	0,5	1	0,75	Standard	11,5
6. S.N.	1,2	1,3	1	1,2	Hypodynamia	15,3
7. D.A.	0,7	1,6	1,25	1,2	Standard	18
8. G. V.	0,4	0,65	0,65	0,6	Hypodynamia	10,2
9. R.S.	0,1	0,2	0,7	0,75	Standard	8,1
10. E.E.	0,5	1,25	1,25	1,45	Hypodynamia	17
11. M.D.	0,1	0,45	0,9	0,95	Hypodynamia	10,2
12. V.A.	1,65	1,65	1,15	1,2	Hypodynamia	28,8
13. V.R.	0,5	0,6	0,75	0,95	Standard	18,6
14. M.R.	1	1,5	1	2	Hypodynamia	27,8
15. I.L.	1,2	1,65	1,3	1,35	Hypodynamia	27,8
16. I.I.	0,8	0,75	1,15	1,3	Standard	23,4
17. I.L.	1,15	1,25	1,65	1,35	Hypodynamia	27,1
18. C.J.	0,4	0,5	0,55	0,75	Standard	15,4
19. G.E.	0,9	1,65	1	0,75	Standard	24,4
20. U.R.	0,8	1,65	1,1	1,15	Hypodynamia	18,7
21. D.D.	1,75	1,95	1,3	2,15	Hypodynamia	31,2
22. A.E.	0,45	0,5	0,8	0,85	Standard	17,6
23. M.V.	1	0,75	0,85	1	Standard	15,7
24. D.I.	0,35	0,95	1	0,95	Standard	13,9
25. T.Y.	2	1,95	2,1	2,4	Hypodynamia	25,4

26.	G.A.	1,55	2,3	1,2	1,6	Hypodynamia	30,9
27.	M.A.	0,95	1,65	1.15	1,52	Hypodynamia	19,5
28.	N.B.	0,55	1,15	0,9	1,15	Standard	15,7
29.	G.A.	2,2	1,65	1,15	2,25	Hypodynamia	31,8
30.	A.R.	0,65	1,7	1,2	2,85	Hypodynamia	30,1
31.	Y.A.	0,5	0,6	0,75	0,9	Standard	18,2
32.	D.D.	1,15	2,2	1,3	1,45	Standard	30
33.	K.R.	0,6	0,5	1	1,2	standard	20
34.	K.M.	0,4	0,75	1	1,55	standard	15,7
35.	S.R.	0,35	1	0,6	0,65	Standard	11,2
36.	L.K.	0,45	1	1	1,9	Standard	16,9
37.	K.A.	0,5	1,3	0,85	0,75	Standard	13,7
38.	A.S.	1,35	2,25	1,85	2,9	Hypodynamia	25,2
39.	Z.T.	0,9	1,3	1	1,85	Hypodynamia	19,1
40.	Y.Y.	0,9	0,7	0,9	0,5	Standard	12,9
41.	S.A.	1,1	1,45	1,75	2,95	Hypodynamia	23,7
42.	G.R.	1,1	1,6	1,35	1,45	Hypodynamia	27,8
43.	A.K.	0,5	0,5	8,5	9	Standard	18,4
44.	Y.E.	0,6	1,5	1	1.25	Hypodynamia	23,6

Conclusion

The results of the test and measurements showed that the percentage of subcutaneous fat in most is higher than normal. In men, the norm is 9-15%, in girls 14-21%.

The normal content of subcutaneous fat in 31.82% of girls, of them hypodynamia according to the test results in 0%. an increased content of subcutaneous fat is observed in 68.18% of girls, of whom hypodynamia was detected in 80%

Normal subcutaneous fat content was detected in 40.91% of the guys, 0% of them had hypodynamia. 50.09% of the boys showed an increased content of subcutaneous fat, hypodynamia is observed in 69.23% of them.

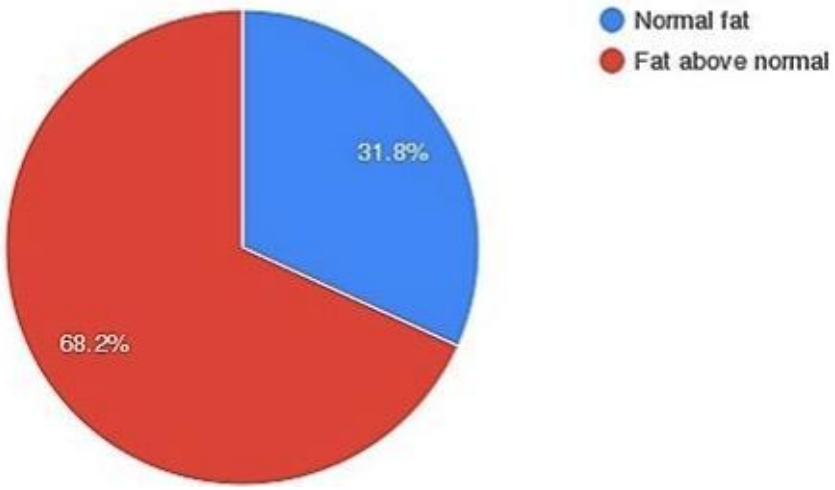

Figure 2. Percentage of girls

According to the results, it was revealed that mostly girls are prone to hypodynamia, and, therefore, the percentage of fat in their body often exceeds the norm. According to the test, girls often neglect strength training, do not play sports, all this leads to the accumulation of fat in the body. The guys also revealed an increased fat content, and a large percentage of those prone to hypodynamia. but most of the guys pointed out about sports and physical activity. Therefore, guys have a higher percentage of normal fat content than girls.

Also, it was noted that a sedentary lifestyle is associated with a long sitting position (more than 6 hours), since lectures and classes at the university take a large amount of time.

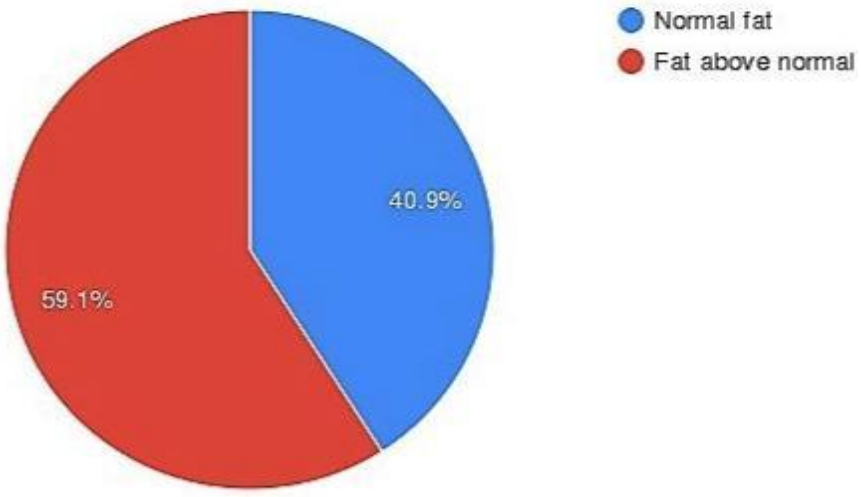

Figure 3. Percentage of boys

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BASICS OF PROPER NUTRITION ACCORDING TO AYURVEDA

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The article highlights the basics of rational nutrition according to the ancient science of life.

Key words: Aurveda, rational nutrition, digestive system, digestive activity, sequence of meals.

Насибуллина А.М., Салиева А.И.

ОСНОВЫ ПРАВИЛЬНОГО ПИТАНИЯ В СООТВЕТСТВИИ С АЮРВЕДОЙ

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В статье обсуждаются основы правильного питания в соответствии с древней наукой о жизни.

Ключевые слова: Аюрведа, рациональное питание, пищеварительная система, пищеварительная активность, последовательность питания.

Today the problem of malnutrition is extremely worrying for a certain part of population. Digestive disorders and food intolerance can be partially blamed for the development of many diseases. There are diseases of the digestive tract, as well as dermatological, endocrine, cardiovascular and many others. In modern Russia, it is difficult to call food consumed by the population healthy. The above diseases are spreading more and more every year, but few people are interested in the true causes of poor health.

In the course of the study the basic principles of healthy eating and eating habits were discovered, which together help to remain a healthy person. Ayurveda in Sanskrit means "science of life" or "knowledge of life". ("Ayur" – life, "Veda" – knowledge) [1,2].

According to Ayurveda, digestive system disorders are caused by the following factors:

- Incorrect eating time, that is, without taking into consideration the daily periods of digestive activity [2,4].
- non-compliance of a certain sequence in the use of products [2].
- eating food that is not suitable for this organism [2,4].
- eating immature, improperly cooked food [2].
- eating food imported from other countries [2,4].

Of course, all these factors are not always taken into account by modern nutritionists and the population.

1. Daily periods of digestive activity.

After waking up, the body needs cleansing, both physical and psychological, so before breakfast, a person should brush his teeth, tongue, wash his body, do a little breathing and physical exercises. Only after that, in the period from 6 am to 9 pm, when the body wakes up, you can start breakfast. It should be light so that the body gets energy. Some people do not need breakfast, they easily do without it [2,3,4].

Starting at 11 am, digestion increases. 12 o'clock in the afternoon is the best time for a nutritious lunch. It is at this time that the most active phase of digestion begins, all the eaten foods will be absorbed in the best possible form [2,3].

After a hard day's work, the body needs a small amount of light food to restore strength and energy. The best time for dinner is from 18 to 19 pm. At this time, digestive activity is reduced, so it is recommended to eat no more than half of lunch [2,3].

2. The sequence of meals.

According to Ayurveda, the sequence of food plays a big role in digestion. All products are divided into heavy, medium and light. At the very beginning of the meal, heavy ones are used, since they are the hardest to digest, then medium and light at the end. This principle facilitates the process of digestion [2,5].

Hard-to-digest foods include sweets, such as cakes, sweets, nuts, chees, beef, some types of bread, pasta. That is, products that have a sweet taste [2].

Next in severity are raw vegetables, legumes, bread, salads, other types of meat, fish, cereals, stewed vegetables. [2,3]

And finally, easily digestible food: milk porridge, fermented milk products, fruit [2].

3. Eating food unsuitable for this organism.

Food is selected individually for a person in accordance with the constitution of the body based on the taste components of food.

For people with excessive Kapha dosha, it is necessary to be careful with eating too sweet, salty, sour food. With its excess, there may be failures in the body [2,3,4].

For Pitta dosha, it is worth regulating the consumption of too salty, sour and spicy food. It strengthens the already elevated Pitta dosha [2,3,4].

Excessive consumption of astringent and bitter food will be harmful for the Vatta dosha [2,3]. To find out your type of dosha or body constitution in another way, you can take a specialized test.

4. Spoiled food contains a lot of harmful compounds, putrefactive bacteria that have a bad effect on health [2].

5. Food grown on the same land where a person lives contains all the necessary substances to feel good in this area. If you eat food from other localities, then a person will not receive the necessary vitamins and minerals [4].

6. The amount of food and sensations during meals play a special role in nutrition.

According to Ayurveda, it is necessary to eat only when a person is starving. It is necessary to wait for the complete digestion of the previous food until the stomach is completely empty. It is necessary to eat food in a calm state, sitting, eating about 2/3 of the volume of the stomach or its capabilities. Chewing food must be done carefully.

Sleeping after eating is not recommended, as the activity of the digestive system decreases during sleep [2].

To sum up we can say the following: to regulate nutrition, you must first find out the type of your body, that is, the type of dosha. Further, according to Ayurveda, you choose food that you should exclude or add to your diet. It is also necessary to follow the periods of activity of the digestive system and the order and consumption of food. In addition, do not forget where you live: eat food that grows in the same place as you.

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УДК 159

Nematzoda T.K.

STRESS AND IT'S EFFECT ON THE IMMUNE SYSTEM

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Stress is a constant companion human life, the body's reaction to any external influence or internal experience. Stress is a necessary response of the body to changing conditions of the external and internal environment. Against the background of intense stress, immunity decreases. With strong experiences, cortisol, which is called the stress hormone, is released into the bloodstream. High concentrations of this hormone depress the immune system.

Key words: Effect of stress on immunity, immunity, stress, immune system, nervous system.

Неъматзода Т.К.

СТРЕСС И ЕГО ВЛИЯНИЕ НА ИММУННУЮ СИСТЕМУ

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Стресс – это постоянный спутник в жизни человека, реакция организма на любое внешнее воздействие или внутреннее переживание. Стресс является, необходимым ответом организма на изменяющиеся условия внешней и внутренней среды. На фоне интенсивного стресса снижается иммунитет. При сильных переживаниях в кровь выбрасывается кортизол, который называют гормоном стресса. Высокие концентрации этого гормона угнетают работу иммунной системы.

Ключевые слова: Влияние стресса на иммунитет, иммунитет, стресс, иммунная система, нервная система.

Relevance

The autonomic nervous system is a system that helps our body and organs adapt to the environment, because it constantly adapts the body.

Example:

A person is in a stressful situation or falls asleep or in the cold, then our body immediately adapt to this environment.

The autonomic nervous system or vegetative nervous systems is divided into 2 parts:

1. Parasympathetic department - this department turns on in rest mode until everything is in order, for example: when we rest, sleep and when we are calm.
2. Sympathetic nervous system - as soon as we start to stress this system will prepare the body for stress.

* The autonomic nervous system regulates the activity of all organs, glands and blood vessels.

Immunity or the immune system is a system that protects the body from all foreign substances (viruses, bacteria, and so on.)

The word "Immune" comes from the Latin word "Immunis" which means exempt from government service, which the main task is to against various infections or bacteria, it's like migration control. If any foreign substances enter the body, they must pass through the respiratory tract or through the digestive tract and receive a stamp of admission.

The immune system constantly monitors whether something is foreign or part of the body, if it is foreign, then it automatically affects the defence force, but if a person has severe depression or stress, then the immune system loses its control and does not distinguish foreign substances from its own.

Types of stress

- Eustress- is a type of stress, it is a useful stress, it gives a positive response to stress.

- Distress- is a negative type of stress that is difficult for the body to cope with. This type of stress can lead a person to various serious illnesses.
- Emotional stress- during times of stress, the emotional response develops earlier than others, affecting the autonomic nervous system and its endocrine supply.

The purpose of the study: The purpose of my research work is to give information about what the role of stress on our immune system, because the main cause of all diseases is stress.

Nowadays, many people face stressful situations and load themselves with business or study and do not convey the meaning to our nervous system, because the nervous system plays a major role in the human body.

The nervous system is an integral morphological and functional combination various interconnected nervous structures, which, together with the endocrine system, provides an interconnected regulation of the activity of all body systems and a response to changes in the conditions of the internal and external environment.

Materials and methods of research

In order to find out if our immunity is working well, you need to begin consulting with an immunologist and pass such analysis as:

- General blood analysis
- Measurement of antibody titers
- Quantitative measurement of immunoglobulins
- Clinical blood test

1. content of neutrophils
2. number of lymphocytes
3. anemia

• Biochemical analysis

1. Lipids
2. Enzymes
3. Vitamins
4. Desire pigments and acids

• Immunological analysis

1. immunoglobulin
2. lymphocytes
3. number of phagocytes

Take vitamin's such as:

Vitamin D

1. boosts immunity
2. improve thyroid function
3. regulates blood pressure

Vitamin B12

1. improves blood circulation
2. normalises the function of the nervous system
3. form the normal functioning of the immune system

Magnesium

1. improve the cardiovascular system
2. improve immunity
3. normalise sleep

Iron

1. boost immunity
2. improve memory
3. improve concentration

Iodine

1. normalises the function of the thyroid gland
2. strengthen hair, nails, teeth

3. improve skin tone

Balanced nutrition - what we eat really affects our body and well-being. A balanced diet can also help us fight disease. Our diet should include:

Vegetables and fruits

Squirrels

Fats

Carbohydrates

Get some sunshine - after all, the sun not only lifts your spirits, but also works well on the immune system.

Regular exercise - our body can fight diseases much better if it is strong and healthy.

We don’t need a reason to sleep well and rest well, but now there is, because sleep will improve the function of our body and help it to be healthy

Results and discussion: Stress is a constant companion in the life of absolutely every person. After all, it is stress that prevents a person from leading a healthier lifestyle.

According to 2022 estimates, more than half of Russians, that’s 57 % experienced stress over the last period. 42 % of the older generation complained about stress, youth by 79 percent. According to the results of the study, women experience more stress than men, and it can be seen in the following table.

Table 1

The percentage of stress in women and men

Gender	Percentage
Male	51%
Female	61%

Table 2

Stress’s percentages (out of 100%)

Age	Percentage
13-18	79%
18-24	61%
25-32	50%
60+	43%

Conclusion

Nowadays, stress plays a big role because a person in everyday life faces certain difficulties, whether personal problems or external ones in such situations, our body reacts with emotional and physical stress, which is stress. Do not forget that stress is such a disease as flu or inflammation, it needs to be noticed in time and cured so that it does not become chronic. We should spend more time on ourselves and take care of our health.

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УДК 616

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ETIOLOGY AND PATHOGENESIS OF STROKE, ACVA (ACUTE CEREBROVASCULAR ACCIDENT)

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The article contains a number of data on the etiology, clinical manifestations, forms and various methods of treatment and prevention of stroke in people of different ages

Key words: stroke, cerebral infarction, ischemic stroke, subarachnoid hemorrhage, insufficient cerebral circulation.

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ЭТИОЛОГИЯ И ПАТОГЕНЕЗ ИНСУЛЬТА, ОНМК (ОСТРОЕ НАРУШЕНИЕ МОЗГОВОГО КРОВООБРАЩЕНИЯ)

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В статье рассмотрены вопросы об этиологии, клинических проявлениях, формах и различных методах лечения и профилактики инсульта у людей разного возраста

Ключевые слова: инсульт, инфаркт мозга, ишемический инсульт, субарахноидальное кровоизлияние, недостаточность мозгового кровообращения.

Relevance

Every year 6 million cerebrovascular diseases are registered in the world. In Russia more than 500 thousand cases of acute cerebrovascular diseases are registered every year.

Purpose of analysis: to study the origin of the stroke and how to diagnose its presence.

Materials and methods: analysis of articles on the given theme by other authors, internet sources, analysis of statistic data of medical indices, usage of methodical elaborations on etiology of stroke.

Results and discussion: the risk factors and causes of stroke, symptoms of the disease, its clinical manifestations were highlighted. On the basis of a systematic review of scientific works of popular authors the recommendations for the prevention of stroke are given.

Stroke is an acute cerebral circulation disorder ACVA.A stroke appears as a result of a cessation of blood supply and functioning of a part of the brain as a result of damage to the vessel. If the area of the affected area is enlarged, the stroke has a complicated form. Necrosis of an area of the brain is called an infarction.

Acute cerebrovascular accident is one of the top 10 diseases leading to death. At the same time, according to the latest scientific data, stroke, which is considered to be a disease of old age, occurs in younger people as well.

Relevance of the disease

Every year 6 million cerebrovascular diseases are registered in the world. According to the All-Russian Center for Preventive Medicine, 25% of men and 39% of women die of this pathology. Recently , stroke occurred in most cases in patients 55 to 60 years and older. Currently, about a third of all stroke patients are of working age - 20 - 59 years old. Nowadays, stroke is not age-restricted, and children 5-6 years old can have it.

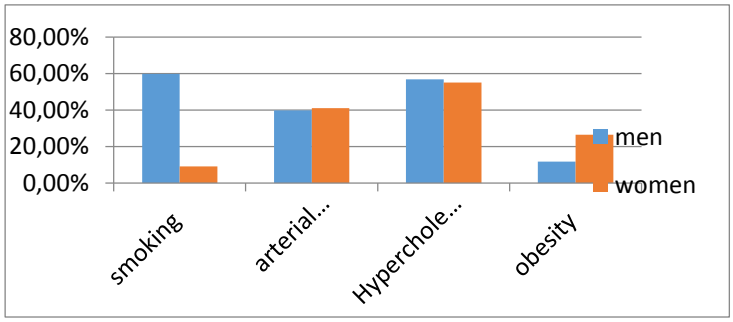
The incidence of stroke in Russia remains one of the highest in the world and is 3.4 per 1000 people per year. About 30% of strokes in the acute period of the disease end in death. The priority in this problem is the study, prevention and effective treatment of vascular diseases of the brain and STEMI.

Etiology of stroke

The most important risk factors for stroke:

The main factors that increase the risk of stroke include: arterial hypertension, heart disease, atrial fibrillation, lipid metabolism disorders, diabetes mellitus, pathology of the main arteries of the head, hemostatic disorders as well as gender, age, ethnicity, heredity.

The prevalence of the main risk factors in Russia is high: 59.8 % of adult men and 9.1 % of women smoky, with arterial hypertension 39.9 and 41.1 %; hypercholesterolemia is 56.9 and Obesity 11.8% and 26.5% respectively; 12.0% of men and 3.0% of women consumed alcohol in excess



Smoking increases the risk of ischemic stroke by 2-4 times, subarachnoid hemorrhage by 3-4 times, and ischemic heart disease by 3-6 times. Systematic alcohol abuse doubles the risk of stroke, especially hemorrhagic stroke

Stages of the development of the ACVA

The first stage is moderately pronounced, characterized by diffuse symptoms. The patient may complain of transient headaches, intermittent sleep disturbances, and increased irritability. In the second stage, clinical manifestations of the disease begin to form. The person often has spikes in blood pressure, loss of spatial awareness, and impaired cognitive functions. As a rule, at this stage,

the disease is diagnosed most frequently. The third stage is pronounced, with irreversible changes occurring in the body. Serious disorders of memory and cerebral circulation in general appear. In rare clinical situations, complications in the form of strokes are noted

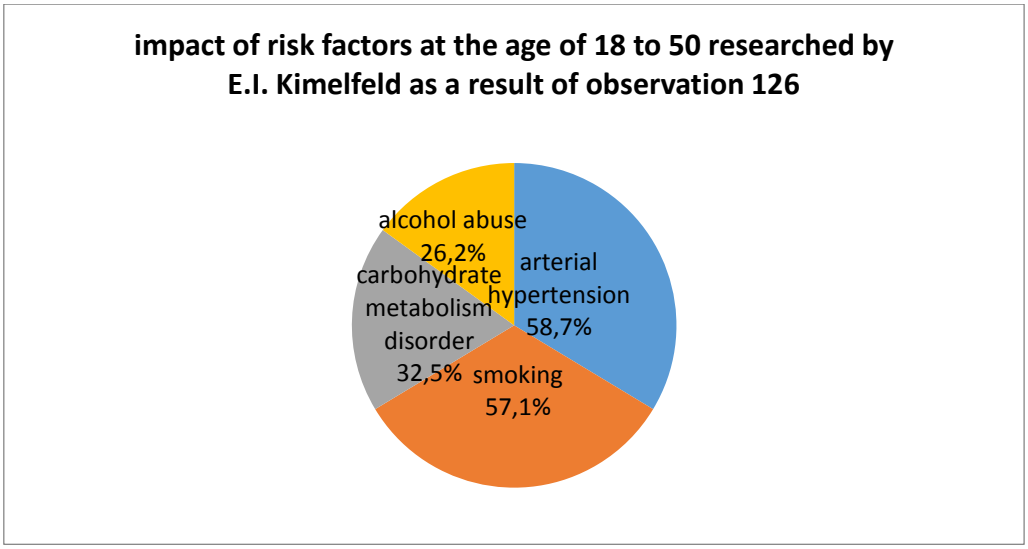
Systematic review

According to R.D. Brown (1996) the risk of stroke doubles every decade from the age of 55. The risk factors of ischemic stroke are recognized by the elderly and old age. Thus, according to J. Chalmers, S. MacMahon, C. Anderson et al. (2000), at the age of 45-54, stroke occurs in 1 person per 1000, while at the age of 75-84 in 1 of 50.

Studies have shown that gender is a risk factor for stroke. Thus, according to Appelros P. (2009), male gender is a 33% greater risk factor for stroke than female gender

In a global study conducted between 1990 and 2013. Feigin V.L., Roth G.A., Naghavi M. et al. (2016), covering 188 countries, noted that more than 90% of the risk of stroke is due to variable factors: smoking, poor diet, low physical activity, high blood pressure, high body mass index, high fasting plasma glucose, high total cholesterol and low glomerular filtration rate and environmental factors - air pollution.

According to experts, poor sleep has a negative impact on health. Observations of Y. Leng, F.P. Cappuccio, N.W. Wainwright et al. for 9.5 years on 9,692 participants included determination of sleep duration and its impact on stroke development. The authors hypothesized that sleeping 5-6 hours instead of 8-9 hours is an indicator of cardiovascular morbidity. Experimental Sleep restriction contributed to increased blood pressure and cholesterol in general.



Pathogenesis

Types of stroke, symptoms of the disease

There are two main groups of vascular pathologies: acute and chronic disorders of cerebral circulation.

The first group, acute, is divided into three subgroups:

- transient cerebral circulatory disorders
- cerebral strokes
- strokes of mixed type.

Transient disorders of cerebral circulation include:

- Transient ischemic attack - a temporary acute disorder
- Cerebral circulation disorder (microstroke)
- A hypertensive crisis is a condition in which the blood pressure rises sharply. Blood pressure to values equal to or greater than 180/120 mm PTs.

Brain strokes can be ischemic or hemorrhagic.

Ischemic stroke. The first mechanism is the blockage of an artery by a clot which is called a blood clot. If the clot, which has formed on the wall or in the heart, it can travel with the bloodstream to the brain. In the part of the brain feeding the clogged vessel, it causes an ischemic stroke.

Hemorrhagic stroke. The second mechanism of stroke is a rupture of an artery in the brain. In this case, hemorrhage around it, like a bruise, and that would be a hemorrhagic stroke. Hemorrhagic stroke usually occurs in people with already damaged blood vessels and high blood pressure. due to hemorrhage, a larger area of the brain is damaged. Therefore, the prognosis is worse.

Clinical manifestations

Stroke should be suspected in all cases of acute development of focal neurological symptoms or a sudden change in the level of consciousness. Symptoms depend on the localization of the infarction.

Carotid system of cerebral blood supply (arteries: carotid,ophthalmic, middle cerebral, and anterior cerebral arteries)

1. Motor disorders:

- ❖ hemiparesis/hemiplegia on the side opposite side of cerebral lesion.
- ❖ Weakness, awkwardness, and stiffness in the arm and/or leg.
- ❖ a combination of lesions of the arm and the lower part of the facial musculature.

2. Sensory disorders:

- ❖ Decreased/absence of pain and other sensitivities

- ❖ Hemitype on the side opposite to the lesion brain.

3. Speech disorders:

- ❖ slurred and unclear speech
- ❖ impairment of perception of other people's speech
- ❖ Disorder in the communication of one's thoughts

4. Visual impairments:

- ❖ blurred vision

5. Gaze paresis:

- ❖ limitation of arbitrary joint movement of the eyes to the side opposite to the focus of the stroke.

When a infarct is localized in Vertebral-basilar system of blood supply to the brain (arteries: vertebral, main/basilar, internal auditory, posterior cerebral)

Dizziness: systemic vertigo as a feeling of unsteadiness and rotation, sensation of objects moving in a certain direction, a feeling of falling of one's own body, cerebellar syndrome: impaired maintenance of of upright posture and walking with torso, visual disturbances, motor disorders: weakness — hemiparesis / hemiplegia. The face may be involved on the stroke side (weakness of the facial muscles), and weakness in the extremities develops on the opposite side, sensitivity disorders: numbness, decreased pain and other types of sensitivity.6. Speech disorder: blurred and indistinct speech, poor articulation and pronunciation.

Clinical performance characteristics of ischemic stroke

The following clinic is characteristic of ischemic stroke: TIA or transient monocular blindness occurred 1-6 months before the stroke, previously identified angina pectoris or symptoms of ischemia of the lower extremities, pathology of the heart with a high risk of cardioembolism (cardiac arrhythmias, most often in the form of atrial fibrillation, the presence of artificial heart valves, rheumatism), often in old age develops during sleep, after taking a hot bath, physical fatigue, as well as during an attack of atrial fibrillation, prevalence of neurological focal symptoms over general cerebral symptoms; depression of consciousness and intense headache are rare.

Clinical performance characteristic of cerebral hemorrhage

The following clinic is characteristic of cerebral hemorrhage: long-term arterial hypertension with a crisis course, the development of stroke during emotional (stress) or physical overstrain (lifting of gravity), high blood pressure (above 180/110 mmHg) in the first minutes/hours of stroke onset, the age of patients is not a determining factor, however, the older age range is more typical for brain infarctions than for hemorrhages, rapid development of focal neurological and

general cerebral symptoms, which often leads to a comatose state of the patient within a few minutes, characteristic appearance of some patients: purplish-cyanotic face, hypersthenic constitution, nausea and repeated vomiting, absence of transient disorders of cerebral circulation and transient monocular blindness in the anamnesis, pronounced general brain symptoms, complaints of headache in a certain area of the head, at the beginning of a hemorrhagic stroke, a generalized or partial epileptic (convulsive) attack may develop for the first time in life.

Conclusion

The article considers key questions about the etiology, course and manifestation of stroke and stroke disease. Knowing the answers to these questions, your can significantly reduce the risk of their occurrence by following the basic principles of a healthy lifestyle. Everyone should monitor their blood pressure, control blood cholesterol levels, keep a proper diet, reduce the intake of salt in diet. It is necessary to eat more fruits and vegetables, and exercise. It is important to remember that stroke can affect anyone, so it is very important to recognize the disease and either prevent it or begin treatment at the right time.

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УДК 616

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MYOCARDIAL INFARCTION

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The cause of myocardial infarction is ischemia of the coronary vessels, which is often accompanied by coronary arterioles. During the development of atherosclerosis, three main processes occur: 1) proliferation of endothelial cells that form the connective tissue; 1) accumulation of lipids in the walls of blood vessels; 3) inflammation. In addition to atherosclerosis, a heart attack can be caused by the following pathological processes: 1) diseases of the coronary vessels; 1) embolism of the coronary arteries;2) congenital defect of the coronary vessels; 3) a sharp difference between the heart's need for blood and its consumption; 5) violation of coagulation.

Key words: myocardial infarction, blood pressure, ischemia, oxygen, atherosclerosis,coronary circulation, coronary vessels, thrombus.

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ИНФАРКТ МИОКАРДА

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Причина инфаркта миокарда- ишемия коронарных сосудов, часто сопровождающаяся поражением коронарных артериол. При развитии атеросклероза происходят: 1) пролиферация эндотелиальных клеток, образующих соединительную ткань; 1) накопление липидов в стенках кровеносных сосудов; 3) воспаление. Помимо атеросклероза, сердечный приступ может быть вызван следующими патологическими процессами: 1) заболеваниями коронарных сосудов; 1) эмболией коронарных артерий;2) врожденным дефектом коронарных сосудов; 3) резкой разницей между потребностью сердца в крови и ее потреблением; 5) нарушение свертываемости крови.

Ключевые слова: инфаркт миокарда, артериальное давление, ишемия, кислород, атеросклероз,коронарное кровообращение, коронарные сосуды, тромб.

The purpose of the study: determining the cause of myocardial infarction**.**

Hypothesis: suppose that many do not know about the causes of myocardial infarction.

Objectives

1. Study the literature about myocardial infarction disease.
2. Find out the main causes of myocardial infarction diseaseПровести testing among students to determine the causes of the disease.

Relevance

Myocardial infarction is one of the clinical forms of coronary heart disease, in which necrosis develops as a result of irreversible ischemia of the myocardium. In myocardial infarction, there is usually a complete or partial sharp decrease in blood flow to the myocardium due to

occlusion by atherosclerotic plaques and blood clots in the lumen of the coronary vessels, as well as as a result of their spasm.

Today, myocardial infarction is one of the most common causes of death in Russia and around the world. Myocardial infarction is one of the most common forms of coronary heart disease. Mortality in the first hours after an attack can reach 30% or more. As a result of a repeated heart attack or stroke, an average of 25% of people per year die. Such a diagnosis shortens a person's life several times.

The incidence rate is from 500 to 1000 people per year per 100 thousand population. Men are more likely to suffer from a heart attack than women. An attack of myocarditis is becoming more common among people between the ages of 30 and 60, although it was previously thought that it could appear only after 50-60 years. The literature describes several hundred rare infarctions in newborns, the cause of which is blockage of the coronary arteries by a thrombus or hypotrophy of one of them.

A large percentage of deaths from a heart attack in Russia, as well as a low level of health control, is an important medical problem. Today, the risks of heart attack in Russia are high, and there is no downward trend.

Results and discussion

To find out if myocardial infarction is a threat to the health of students at our university, we conducted an anonymous test.

Stress level

36% of students have a high level of stress, 60% - medium, low - 4 %.

The ratio of indicators of height and weight.

Normal ratio of height and weight in 45% of respondents, slight overweight in 55% of students, which leads to heart disease.

Blood pressure value.

When analyzing blood pressure, it was found that 17% had high blood pressure and 25% had low blood pressure, the rest had normal blood pressure.

Cholesterol level.

The level of cholesterol is normal - 15%, high cholesterol in 13% of students, 87% do not know their cholesterol level.

Physical activity.

Physical activity among students is low (2-3 times a week) in 63%, quite high in 18%, sedentary lifestyle is 19%. Also, low physical activity can lead to the development of heart disease.

Conclusion: During the testing, the causes of myocardial infarction were found out. These are high stress levels, overweight, high blood pressure, high cholesterol in food, sedentary lifestyle.

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ALZHEIMER'S DISEASE

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The scientific article discusses the issues of the incidence of Alzheimer's. In this review, an attempt is made to summarize all the available achievements in the diagnosis of Alzheimer's disease, including modern and promising ones, in order to conduct a sanitary analysis and assess their shortcomings and effectiveness.

Key words: Alzheimer's disease, dementia, symptoms of the disease, classification of the disease.

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БОЛЕЗНЬ АЛЬЦГЕЙМЕРА

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В научной статье рассматриваются вопросы о заболеваемости Альцгеймером. В данном обзоре сделана попытка обобщить все имеющиеся достижения в диагностики болезни Альцгеймера, включая современные и перспективные, с целью провести санитарный анализ и оценить их недостатки и эффективность.

Ключевые слова: Болезнь Альцгеймера, деменция, симптомы болезни, классификация болезни.

Alzheimer's disease is a chronic degenerative brain disease characterized by a sharp decline in intellectual abilities up to the total disintegration of intelligence and mental activity. The disease got its name after Dr. Alois Alzheimer, who first described this disease in 1906.

Memory is a complex process that can be divided into two components — the process of memorization and the process of reproduction. In Alzheimer's disease, it is the process of memorization that is disrupted. There is such a term "consolidation of the memory trace", which refers to the process of transferring information received in the brain from short-term memory to long-term memory. It has not been fully studied, but in patients with Alzheimer's disease, this process is lost. Neither learning nor memorizing poems help them — every day starts with a clean slate for them.

Causes of Alzheimer's disease

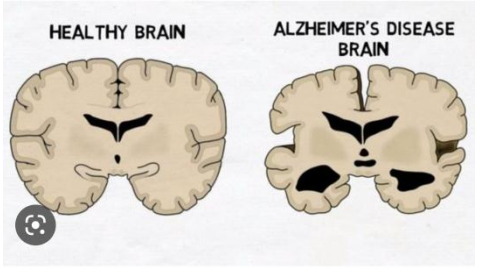
The exact causes of Alzheimer's disease are not fully understood. It is only known that it is based on the pathological activity of specific beta-amyloid proteins and tau proteins:

beta-amyloids have a toxic effect on neurons and disrupt intercellular communication;

tau proteins disrupt the transport system of neurons and are toxic to brain cells.

Thus, Alzheimer's disease is characterized by a violation of protein metabolism, the formation and deposition in tissues of a specific protein-polysaccharide complex – beta-amyloid, the formation of neurofibrillary glomeruli in the cerebral cortex and subcortical gray matter. Studies of the brain of people suffering from this disease have shown pathologies of neurons and the mass formation of plaques and tangles.

In addition, in Alzheimer's disease, the body lacks an enzyme necessary for the formation of the neurotransmitter acetylcholine, which is an important participant in intercellular communication.



Pathological forms of beta-amyloid are formed in all people, but they are eliminated (removed) from the brain and do not cause problems. The modern hypothesis about the development of the disease is that the disease occurs precisely because of a violation of elimination. Protein accumulates in the brain and, having exceeded a certain threshold, triggers the disease. Various risk factors are involved in the violation of the elimination of this protein — age, bad habits (smoking, excessive alcohol consumption), vascular pathologies, genetic predisposition.

Classification of the disease

The modern classification is based on the age principle, in which 65 years is a kind of reference point. According to statistics, starting from the age of 65, approximately every five years there is a doubling of the incidence of Alzheimer's disease. There are two clinical types:

Alzheimer's disease with an early onset (up to 65 years - the so-called presenile variant) is characterized by a rapid progression of memory impairment, intellectual activity and higher cortical functions. This leads to the early development of total dementia with a pronounced breakdown of speech, life skills and disruption of various types of perception (visual, auditory, tactile). This form is characterized by a family history of the disease.

Alzheimer's disease with a late onset (after 65 - senile variant) progresses more slowly, memory disorders remain the main symptom for a long time. In the future, with the steady development of the disease, total dementia of the type of amnesia is observed. It is relatively rare for severe cortical focal disorders to occur, leading to paralysis.

In addition, it provides for the isolation of an atypical form, or mixed-type dementia, when symptoms characteristic of both Alzheimer's disease and vascular dementia are combined.

The main symptoms of Alzheimer's disease:

- amnesia – memory loss, forgetfulness;
- loss of ability to concentrate attention;
- apraxia (loss of practical skills, for example, dressing, tying shoelaces, making coffee, etc.);
- loss of orientation in time and space;
- violation of cognitive (cognitive) functions;
- agnosia (lack of interpretation of perceived information);
- motor aphasia (speech disorder, slurred speech);
- apathy (lack of interest in life, loss of interest in previous hobbies and favorite activities);
- problems in self-service and communication with other people.

Pathophysiology

Genetic factors play an important role and about 15% of cases are familial. These fall into two main groups: early-onset disease with autosomal dominant inheri- tance and a later-onset group whose inheritance is poly- genic. Mutations in several genes have been described which cause the disease. In addition, the inheritance of one of the alleles of apolipoprotein ε, apo ε4, is associated with an increased risk of developing the dis- ease (2–4 times higher in heterozygotes and 6–8 times in homozygotes). However, its presence is neither neces- sary nor sufficient for the development of the disease, so screening for its presence is not clinically useful. Macroscopically, the brain is atrophic, particularly the cerebral cortex and hippocampus. On histological examination the disease is characterised by the presence of senile plaques and neurofibrillary tangles in the cer- ebral cortex.

Histochemical staining demonstrates sig- nificant quantities of amyloid in the plaques (Fig. 26.39) which typically stain positive for the protein ubiquitin which is involved in targeting unwanted or damaged proteins for degradation. This has led to the suggestion that the disease may be due to defects in the ability of neuronal cells to degrade unwanted proteins. Many dif- ferent neurotransmitter abnormalities have also been

described. In particular, there is impairment of choliner- gic transmission, although abnormalities of noradrena- line, 5-HT, glutamate and substance P have also been described.

Clinical features

The key clinical feature is impairment of the ability to remember information acquired in the past. Hence, patients present with gradual impairment of memory, usually in association with disorders of other cortical functions. Short-term and long-term memory are both affected, but defects in the former are usually more obvious. Later in the course of the disease, typical fea- tures include apraxia, visuo-spatial impairment and aphasia. In the early stages of the disease patients may notice these problems, but as the disease progresses it is common for patients to deny that there is anything wrong (anosognosia). In this situation, patients are often brought to medical attention by their carers. Depression is common. Occasionally, patients become aggressive, and the clinical features are made acutely worse by coexistent intercurrent illness.

Investigations and management

Investigation is aimed at excluding other treatable causes of dementia (see Box 26.75), as histological confirmation of the diagnosis usually occurs only after death. There is no known treatment, though recently anticholinesterases such as donepezil, rivastigmine and galantamine, and

the NMDA receptor antagonist, memantine, have been shown to be of some benefit (Box 26.76). Management consists largely of providing a familiar environment for the patient, and providing support for the carers. Many patients are depressed, and treatment with antidepres- sant medication may occasionally be helpful.

Diagnosis of Alzheimer's disease

As a rule, the diagnosis of Alzheimer's disease is similar to the diagnosis of other types of dementia. But despite the clinical and specific laboratory and imaging characteristics, the final diagnosis can only be confirmed by histological examination of brain tissue.

If the patient or his relatives have complaints of memory loss, professional and social maladaptation is carried out:

objective examination to identify the characteristic clinical signs of dementia;

collecting anamnesis and finding out the family history of Alzheimer's disease;

investigation of mental status.

Different tests are used to diagnose cognitive functions. For example, the "Mini-Cog" test is a very simple but informative method that includes an assessment of short-term memory (memorizing and reproducing 3 words) and visual-spatial coordination (the "drawing hours" test).

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УДК 61

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FOOD USEFUL FOR THE BRAIN

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This article will consider the problems of nutrition and methods of the influence of food on our brain and consciousness. The brain is one of the most complex organs of the human body. Without it, neither mental work nor normal physiology is possible. Its functioning requires: a variety of amino acids; Omega 3 and Omega 6 polyunsaturated fats; vitamins, especially vitamins E and C; water and many other substances and compounds. Therefore, the principles of nutrition for maintaining brain health are reduced to a few simple rules. Introduction to the diet of certain foods containing all the useful substances necessary for the thinking organ. These are lean white meat, fatty sea fish and seafood (except caviar), vegetables and fruits, cereals, nuts, natural unrefined oils, not too fatty dairy products, herbs and seasonings.

Key words: food, brain, mood, emotions.

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ПИЩА, ПОЛЕЗНАЯ ДЛЯ МОЗГА

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В этой статье будут рассмотрены проблемы питания и методы влияния пищи на наш мозг и сознание. Мозг - один из самых сложных органов человеческого тела. Без этого невозможны ни умственная работа, ни нормальная физиология. Для его функционирования необходимы: разнообразные аминокислоты; полиненасыщенные жиры Омега-3 и Омега-6; витамины, особенно витамины Е и С; вода и многие другие вещества и соединения. Поэтому принципы питания для поддержания здоровья мозга сводятся к нескольким простым правилам. Введение в рацион определенных продуктов, содержащих все полезные вещества, необходимые для мыслящего органа. Это нежирное белое мясо, жирная морская рыба и морепродукты (кроме икры), овощи и фрукты, крупы, орехи, натуральные нерафинированные масла, не слишком жирные молочные продукты, зелень и приправы.

Ключевые слова: Еда, мозг, настроение, эмоции.

Relevance

In our time, the topic of nutrition will always stand above all others, because we are what we eat.

Because of this, it is very important to monitor your diet, because it is already an integral part of our lives.

The purpose of the study

To study the influence of our nutrition on our brain and emotional processes

Materials and methods: Analysis and processing of electronic resources and paper media

Results and discussion

Nutrition in all aspects of our life and thinking makes a huge contribution to the state of the body.

The brain: structure, functions:

The human body is a very complex system controlled by an incredibly powerful computer – the brain. The brain controls all the actions of the human body. When reflexes are carried out, signals are received from the working organs to the brain regarding the effectiveness of reactions. The set of neural pathways - the reflex arc and the ways of receiving feedback - forms a reflex ring. The result of such control is new adaptive actions. And, finally, the brain is the center of higher nervous activity (HNI), thanks to which a person has advantages in comparison with "smart" technical systems and differs from animals with elementary mental activity. So, the brain is the highest department of the central nervous system, performs reflex, conducting, informative and integrative functions.

The importance of nutrition in human life

One of the most important components of a healthy lifestyle is a rational diet. The majority of the population treats their health with disdain. Lack of time, incompetence in matters of food culture, the pace of modern life - all this has led to promiscuity in the choice of products.

We are concerned about the growing popularity of fast food products containing a large number of various flavors, dyes, modified components. Improper nutrition becomes a serious risk factor for the development of many diseases. Statistics of recent years show a sharp increase among young people of people suffering from obesity, diseases of the cardiovascular system, diabetes, etc. It is possible to prevent such diseases if you lead a healthy lifestyle and, first of all, eat right.

Nutrition provides the most important function of the human body, supplying it with the energy necessary to cover the costs of life processes.

Olive oil

The benefits of olive oil: The oil helps to dilate blood vessels and lower blood pressure, reduces the outflow of bile and restores the cells of articular cartilage. Bitter chocolate. how is bitter chocolate useful**?** Effectively dilates blood vessels and reduces blood pressure.has an antioxidant effect. reduces the level of cholesterol and other atherogenic lipoproteins, helps to reduce the risk of heart attack, angina and stroke.

it is believed that cocoa slows down the growth of cancer cells, but the exact antitumor mechanisms have not been studied enough

cocoa affects immune cells involved in both innate and acquired immunity.

polyphenols affect brain function, which was confirmed during tomography. flavonols and methylxanthines improve memory and cognitive functions, participate in the growth of nerve cells.

the positive effect of flavonoids on platelet function was noted, reducing the risk of blood clots.

in people with an increased level of anxiety, chocolate in experiments lowered the synthesis of stress mediators, that is, it had a calming effect.

Blueberries

Vitamins A, C and group B are fundamental vitamins for the health of absolutely all body systems

• Vitamin K – regulates blood clotting, diluting it and preventing the formation of blood clots

• Antioxidants – anthocyanins neutralize the action of free radicals and slow down the aging process; flavonoids and tannins stop inflammatory processes

• Pantothenic acid – activates and normalizes metabolism

• Neomyrtillin is a natural glycoside that lowers blood sugar levels

Grass-fed beef: Herbal beef contains three times more omega-3 fatty acids, 7 times more beta-carotene (a precursor of vitamin A), 10 times more vitamin E and significantly more antioxidant enzymes that fight cancer, compared with beef obtained from animals on grain, researchers from the University of California found University of Davis and University of California Chico.There are two essential fatty acids in the human diet: omega-3 fatty acids and omega-6 fatty acids. A healthy diet should consist of about a 1:1 ratio of two fatty acids, but a standard American consumes 30 times more omega-6 than omega-3, researchers say.Omega-3 is a "good" fat.Omega-3 fatty acids were first discovered in the 1970s when doctors noticed that Eskimos had exceptionally low rates of cardiovascular disease and arthritis, despite a high-fat diet.

Greens

The benefits of greens in the diet:Greens are a rich source of vitamins and trace elements. The benefits of greenery for humans: first of all, it is the presence of ascorbic acid, which is largely responsible for good immunity and has antioxidant properties, that is, it prevents the aging of the body. Greens are also rich in vitamins E and B.Rating of the most useful greens:Parsley is perhaps one of the most popular representatives of greenery. Despite the fact that the benefits of fresh herbs are undeniable, parsley can be a table decoration not only in summer, but also in winter. Dried or frozen parsley retains most of its beneficial properties for six months. The benefit of this green in the diet is that it contains more than 20 useful substances, including vitamins "B", "C". and folic acidDill is the second most popular type of greens, which is also a storehouse of vitamins: "B1", "B2", "C", "PP", "P" and many others. Dill also contains iron, calcium, potassium and phosphorus

Broccoli

Useful properties of broccoli

Broccoli cabbage contains a huge amount of vitamins and essential elements for a person. It contains vitamins of group B, vitamin E, A, PP, K, U, C. Of the macro- and microelements, potassium, magnesium, calcium, sodium, iron, phosphorus, zinc, manganese, copper and selenium can be called. Potassium removes excess salts from the body, calcium is necessary for the health and normal growth of hair and nails, magnesium is useful for the heart, sodium helps maintain the water-electrolyte balance in the body, manganese and zinc favorably affect the development of tissues and cells, copper plays an important role in hematopoiesis, selenium removes heavy metals and residues of synthetic drugs.

It contains substances that prevent the accumulation of cholesterol in the body and its excretion – choline and methionine.

Almond

Caloric content and nutritional value of almonds

Almonds also contain copper, vitamin B2 (riboflavin) and phosphorus. As a product of plant origin, it contains phytic acid. It impairs the absorption of iron, zinc and calcium and can contribute to a deficiency of minerals.

The benefits of almonds: 8 properties

Conclusion

The brain is one of the most complex organs of the human body. Without this, neither mental work nor normal physiology is possible.

In the course of our study, the following was revealed:

The nature of nutrition affects the performance of the brain:

- the presence in the diet of such products as: sea fish, eggs, nuts, cereals, etc., provides full nutrition, improves brain function as a whole;

– slows down the work of the anorexigenic oxytocin system of the brain, which is simply called the "overeating sensor", it protects a person from overeating and provides a feeling of satiety.

There is nothing new or unique about these rules, you just need to learn how to follow them. This will increase the efficiency of the nervous system, keep it working for many years!

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GASTRIC INFLAMMATION - GASTRITIS: GENERAL INFORMATION, CLINICAL SYMPTOMS AND TREATMENT

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Gastritis is an inflammation of the stomach mucous membrane, in which there is a disturbance in the recovery of the mucous membrane, alterations in the secretion of gastric juice and the contractile activity of the stomach. Mucosal damage can be acute, which is treated as an independent disease, and chronic, which is caused by other communicable and non-communicable diseases or intoxication.

***Key words*:** gastritis, gastrointestinal tract, treatment, diagnosis, clinical picture

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ВОСПАЛЕНИЕ ЖЕЛУДКА – ГАСТРИТ: ОБЩИЕ СВЕДЕНИЯ, КЛИНИЧЕСКИЕ СИМПТОМЫ И ЛЕЧЕНИЕ

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Гастрит - это воспаление слизистой оболочки желудка, при котором происходит нарушение восстановления слизистой оболочки, изменяется секреция желудочного сока и нарушается сократительная активность желудка. Поражение слизистой может быть острым, которая рассматривается как самостоятельное заболевание, и хроническим, которая обусловливается другими инфекционными и неинфекционными заболеваниями или интоксикацией.

Ключевые слова: гастрит, желудочно-кишечный тракт, лечение, диагностика, клиническая картина.

Relevance

The prevalence of gastritis in the Russian Federation is very high with 70-90% of the population infected in different regions. At the same time, the most dangerous form of gastritis, which refers to the "pre-cancerous conditions", is atrophic gastritis. Gastritis is found in 10% of patients under 20 years of age, 20% under 30, 45% of patients between 31 and 50 years of age, and in more than 50% of patients over 50.

And although the prognosis is generally favorable, the disease affects the quality of life of the patients, their ability to work. In addition, the long-term course of the disease is accompanied by dysfunction of other organs of the digestive tract.

Objective of the study: to identify the main causes of gastritis, its symptoms and ways of treatment.

Materials and methods of research: bibliographic and information, statistical methods were used.

Gastritis refers to inflammatory or inflammatory-dystrophic changes in the lining of the stomach; a long-lasting disease that is characterized by dystrophic inflammatory changes, is accompanied by regeneration impairment, as well as by atrophy of epithelial cells.

In 2022, about 90 million new cases were registered in Russia.

In 1990, a new classification of gastritis was introduced in Sydney (table 1).

Table 1

Sydney Classification of Gastritis

Type of gastritis	Lesion localization	Morphological changes	Etiological factors
Acute Chronic «Special» forms — Reactive; — Lymphocytic; — eosinophilic — Hypertrophic — Granulomatous	Antrum Body of the stomach Pangastritis (gastritis of the antrum and stomach body)	Degree of inflammation Inflammatory activity Gastric glands atrophy Metaplasia Contamination of mucosa with Hp	Infectious (Hp) Non-infectious: — Autoimmune — Alcoholic; — postgastroresectional; Conditional upon taking NSAIDs; chemical-induced.

Ethiology: Gastritis is a polyethiological disease caused by exposure to various stomach-damaging factors.

The main causes of gastritis are

1) Infectious agents. 75% of patients with chronic inflammation are contaminated with Helicobacter pylori (HP). Acute gastritis can be caused by coliforms, staphylococci, streptococci, other opportunistic microflora.

2) Chemical exposure. In most cases, acute processes occur due to the entry of aggressive substances into the stomach.

3) Other diseases of the digestive tract. The duodenogastric reflux causes inflammation the stomach mucosa, which provokes irritation.

4) Long-term stress causes prolonged vasospasm and insufficient blood supply to the stomach.

5) Malnourishment is one of the main reasons for the development of chronic superficial gastritis. The regular consumption of fatty, spicy, hot food, carbonated beverages causes irritation of the lining of the stomach and increases the effect of other factors. Less frequently, chemical or mechanical damage provokes an acute process.

6) In older age, thinning of the stomach lining becomes the main factor, which leads to a decrease in local resistance.

Clinical picture: Signs of acute gastritis usually appear suddenly when a person has improper eating and dietary habits, takes non-steroidal anti-inflammatory drugs, or in case of poisoning. Disorders of the general condition in acute inflammation are represented by weakness and reduced ability to work.

Chronic gastritis with increased acidity	**Chronic gastritis with reduced acidity**	**Gastroesophageal reflux disease (GERD)**	**Helicobacter pylori infection**
— intense pains in the epigastric area, occurring 20-30 minutes after meals, — chronic constipation, — heartburn, — acid eructation	— dull, aching pains that are intensified after meals. — morning sickness, — early satiety, — stomach heaviness, — diarrhea, flatulence, — gaseous eructation, bitter taste in mouth, — a gray furred tongue.	— heartburn, which increases with body tilt, physical exertion, after abundant meal, and lying position, — eructation accompanied by a sour or bitter taste — possible nausea and vomiting — hypersalivation when sleeping, — bad breath.	— complaints of nausea, vomiting — heaviness in the stomach area after meals, — eructation, heartburn, stomach gurgling. — bitter taste and burning in mouth; — stool disorders: semi-liquid stool and frequent defecation urges.

Diagnostics: the most informative are such tools and laboratory methods as:

1. esophagogastroduodenoscopy
2. Intragastric pH-metry
3. Helicobacter pylori breath test
4. Full Blood Count (FBC)
5. Stool Helicobacter pylori test

Treatment: To eliminate pain syndrome and dyspepsia disorders, a comprehensive approach is needed, including work and rest balance (to avoid physical overstrain, minimize negative emotions and nervous overload, which can provoke a failure of the digestive tract motor control), implementation of dietary recommendations, taking drugs.

A mechanically and chemically soft diet is recommended in acute condition, limiting the consumption of large amounts of food. As the symptoms of gastritis are eliminated, the diet should be adequate, balanced and varied, it is also necessary to eat small portions of food 5-6 times a day.

Patients with different types of gastritis must avoid having chocolate, coffee, carbonated drinks, alcohol, smoking. Canned foods, spices, and products that provoke fermentation processes (milk, sour cream, grapes, brown bread) should be excluded from the diet; smoked, spicy, salted, fried and fatty foods, baked pastry products should also be cut down on.

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THE INFLUENCE OF COVID-19 INFECTION PREVENTION ON THE INCIDENCE RATE

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This paper presents an overview of information on COVID-19 infection. This disease has become widespread among the world's population. The clinical symptoms are mainly similar to those of acute respiratory viral infections. The recommendations below for observing personal and public hygiene rules will help reduce the risk of infection. The study also includes data from surveys to support their position.

Key words: COVID-19 infection, epidemiology, disease prevention, clinical manifestations, laboratory diagnostics.

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ВЛИЯНИЕ ПРОФИЛАКТИКИ КОРОНАВИРУСНОЙ ИНФЕКЦИИ COVID-19 НА ЧИСЛЕННОСТЬ ЗАБОЛЕВАЕМОСТИ

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В работе представлен обзор сведений о коронавирусной инфекции COVID-19. Данное заболевание получило широкое распространение среди населения планеты. Клинические симптомы в основном схожи с симптомами ОРВИ. Приведенные ниже рекомендации по соблюдению правил личной и общественной гигиены позволят снизить риск заражаемости. Для аргументации своей позиции приведены данные анкетирования.

Ключевые слова: коронавирусная инфекция COVID-19, эпидемиология, профилактика заболевания, клинические проявления, лабораторная диагностика.

Relevance

Changes in the environment, increased population density, climate warming, and high population migration all contribute to the emergence and spread of new infections worldwide. Measures are being taken in Russia to prevent infection and spread of COVID-19. For this purpose, government orders have been established, such as Order No. 140-r of January 30, 2020, Order No. 154-r of January 31, 2020, Order No. 194-r of February 3, 2020, Order No. 338-r of February 18, 2020, as well as resolutions of the Chief Sanitary Doctor of the Russian Federation of January 24, 2020, No. 2, of January 31, 2020, No. 3, and others. Currently, numerous clinical trials are being conducted to evaluate diagnostic and treatment methods, and significant efforts are being made to develop vaccines. The COVID-19 pandemic remains a relevant topic for the global medical community.

The aim of this study is to investigate the influence of observing personal hygiene rules during COVID-19 infection on the incidence rate.

Materials and methods

Literature review and analysis, survey

Results and discussion

COVID-19 is an infectious disease caused by the SARS-CoV-2 virus, which contains RNA. The source of infection is a sick person, including those who are in the incubation period or are asymptomatic carriers of the virus.

COVID-19 is a highly contagious viral disease caused by the novel coronavirus (SARS-CoV-2). The disease was first identified in Wuhan, China in December 2019, and since then has spread rapidly throughout the world, leading to a global pandemic. The virus is primarily transmitted through respiratory droplets, and close contact with infected individuals poses the greatest risk of transmission. The highest risk of transmission occurs at the end of the incubation period and the beginning of the disease. Healthcare workers are at significant risk of infection as they are in contact with aerosols for prolonged periods. COVID-19 is transmitted through airborne, droplet, and contact routes. The virus has been detected in fecal samples, but the risk of transmission through the fecal-oral mechanism is low. Clinical manifestations of COVID-19 include pneumonia, acute respiratory viral infection, acute respiratory distress syndrome, septic shock, sepsis, and multi-organ failure. Symptoms include cough, fever, shortness of breath, fatigue, sore throat, loss of smell and taste, runny nose, and conjunctivitis. In the early stages of the disease, there may be headaches, myalgia, nausea, vomiting, rapid heartbeat, and coughing up blood.

Prevention: non-specific prevention measures play a significant role in preventing the spread of coronavirus infection, and first and foremost, this involves restrictive measures and self-isolation. Non-specific prevention involves measures aimed at preventing the spread of infection, including those directed towards the source of infection (infected person), the mechanism of transmission of the infectious agent, and potentially susceptible individuals (protection of individuals in contact with infected individuals).

Recommendations for protection against COVID-19 coronavirus infection:

- Early diagnosis and active detection of infected individuals, even those with asymptomatic forms;

- Compliance with self-isolation measures

- Keeping a distance of 1.5 to 2 meters;

- Observing personal hygiene rules (using disposable tissues when coughing and sneezing, washing hands with soap, using personal respiratory protective equipment (disposable medical masks, respirators, isolating half-masks); carrying out disinfection measures; irrigating the nasal

mucosa with a solution of sodium chloride (isotonic); using medicinal products with protective functions for local application).

To confirm our point of view, we conducted a survey of residents of Ufa. Data was obtained through a questionnaire consisting of 8 questions. The questionnaire was published on the Internet. Analysis and processing of the results were carried out using Microsoft Excel 2019 software. 150 people participated in the survey, of which 125 were women and 25 were men.

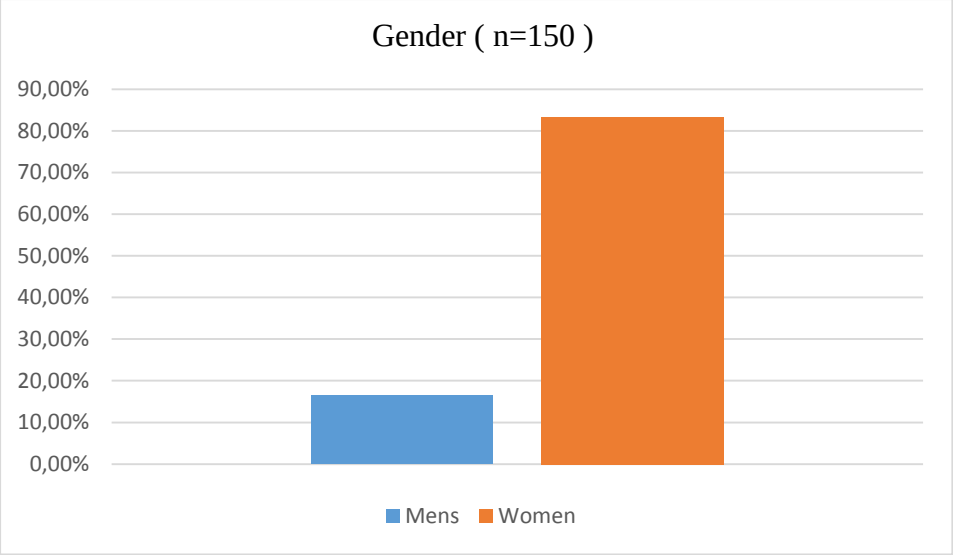

Diagram 1. Gender

The survey results showed that out of 150 people surveyed, 65% had contracted coronavirus, 25% had never contracted it, and 10% had relatives who had contracted the virus.

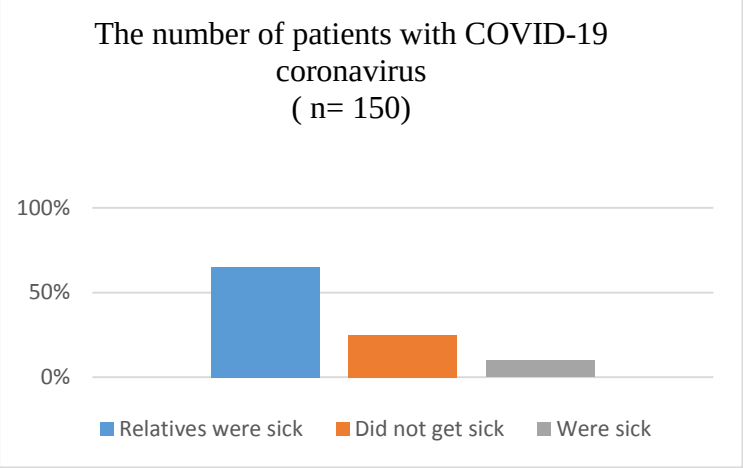

Diagram 2. Number of coronavirus cases

The results also showed that 42% had contracted the virus only once, 11% had contracted it twice, and 15% had contracted it more than twice.

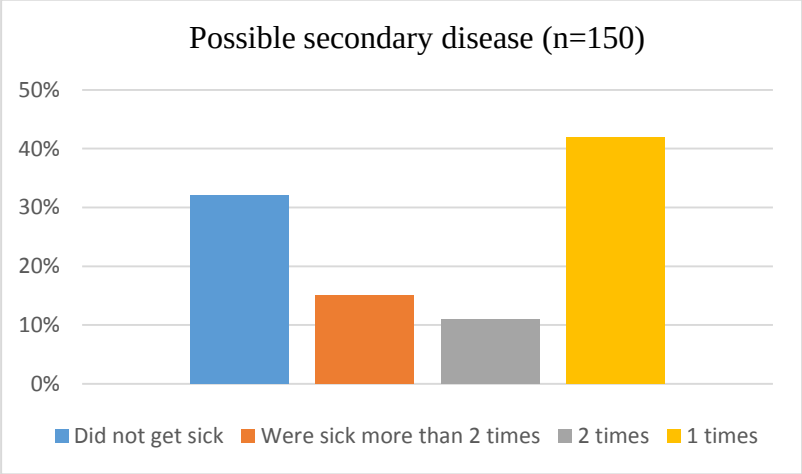

Diagram 3. Possibility of a secondary infection

95% of those surveyed followed preventive measures to protect themselves from coronavirus infection, while 5% did not.

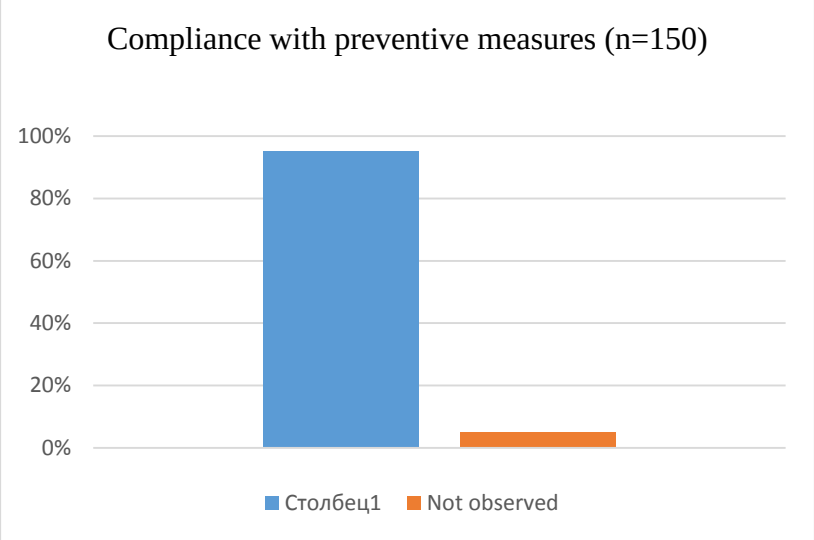

Diagram 4. Adherence to preventive measures

We also asked which personal hygiene rules were considered the most important in their opinion. The answers varied greatly, but mainly included the following: hand washing, social distancing, wearing masks, and vaccination.

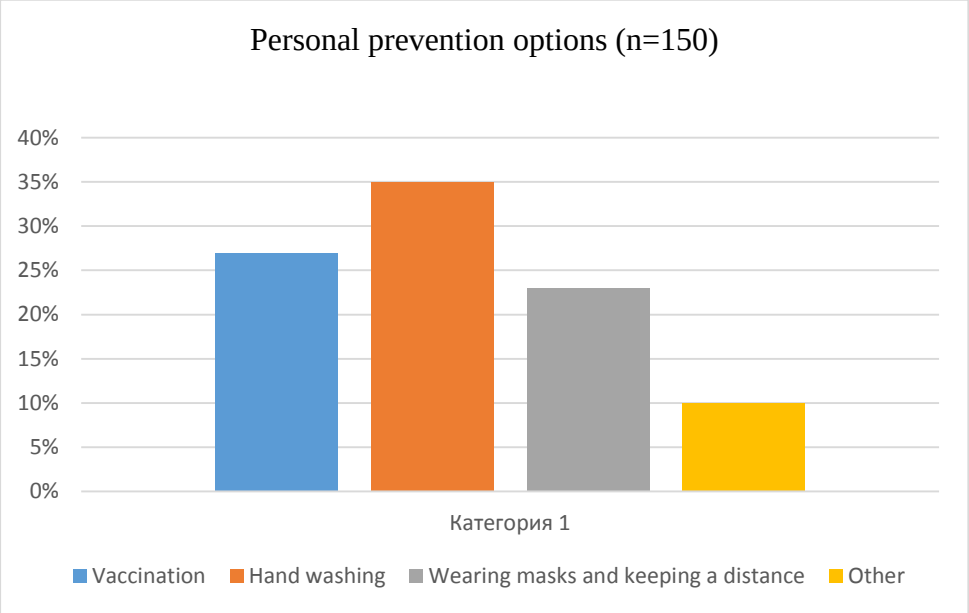

Diagram 5. Personal prevention options

Conclusion

In the course of this scientific work, we found that public prevention measures include conducting sanitary and educational work among the population and following personal hygiene rules. Self-isolation plays an important role in the fight against COVID-19. Therefore, people who use all of the above recommendations to protect and preserve their health will protect both their own health and that of those around them.

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УДК 617

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CATARACT

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The relevance of this topic is that the eyes are the most valuable and amazing gift of nature. They reflect everything we feel: joy, suffering, indifference, love and hate.

Nowadays, the organ of vision is subjected to huge overloads. This is facilitated by the fact that the modern stage of society's development is marked by an information explosion: in order to freely navigate the world around us, a person is forced to absorb a huge amount of information, more than 80 percent of which comes to him through the visual communication channel.

Excessive information loads on the eye and brain can adversely affect the functional properties of the visual apparatus - our eyes. Man has been formed for tens of thousands of years with a vision adapted, first of all, for a good vision into the distance. But only in the most recent times, with the massive spread of literacy, he had a need to constantly and for a long time see small objects (letters) up close. Biologically justified adaptive mechanisms could not be formed in such an evolutionarily short period of time.

Cataract is the main cause of blindness and ranks second among the causes of visual impairment in the world. More than 80% of cataract patients live in low-income developing countries. The pathogenesis of cataract development remains poorly understood, despite the long-term interest of scientists in the causes of this disease.

Key words: cataract, eyes, lens, treatment methods, prevention

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КАТАРАКТА

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Актуальность этой темы заключается в том, что глаза - самый ценный и удивительный дар природы. Они отражают все, что мы чувствуем: радость, страдание, безразличие, любовь и ненависть.

В наши дни орган зрения подвергается огромным перегрузкам. Этому способствует тот факт, что современный этап развития общества ознаменован информационным взрывом: для того чтобы свободно ориентироваться в окружающем мире, человек вынужден усваивать огромное количество информации, более 80 процентов которой поступает к нему по визуальному каналу коммуникации.

Чрезмерные информационные нагрузки на глаз и мозг могут негативно сказаться на функциональных свойствах зрительного аппарата - наших глазах. Человек формировался на протяжении десятков тысяч лет со зрением, приспособленным, прежде всего, для хорошего видения вдаль. Но только в самое последнее время, с массовым распространением грамотности, у него возникла потребность постоянно и в течение длительного времени рассматривать мелкие предметы (буквы) вблизи. Биологически обоснованные адаптивные механизмы не могли сформироваться за такой эволюционно короткий промежуток времени.

Катаракта является основной причиной слепоты и занимает второе место среди причин нарушения зрения в мире. Более 80% пациентов с катарактой проживают в развивающихся странах с низким доходом. Патогенез развития катаракты остается малоизученным, несмотря на многолетний интерес ученых к причинам возникновения этого заболевания.

Ключевые слова: катаракта, глаза, хрусталик, методы лечения, профилактика.

Cataract is a pathology of the visual organ characterized by partial or total opacity of the lens, which is located between the vitreous body and the iris of the eye. The lens acts as an anatomical lens, its main task is to refract rays with their subsequent projection onto the retina. If the lens becomes cloudy, the natural process of refraction of rays is disrupted, which reduces visual acuity or a person goes blind altogether.

The main and most common clinical sign of cataract is expressed in a visual defect, which is characterized as a veil in front of the eyes. This symptom directly indicates clouding of the lens, it is accompanied by a decrease in visual acuity.

Among other symptoms of cataract, ophthalmologists include:

1. blurred or blurred vision;
2. colors seem dull and faded;
3. circles appear around the light sources;
4. sensitivity to sunlight or bright light;
5. deterioration of vision at night;
6. high need for brighter lighting when reading;
7. glasses don't help anymore.

Diagnostic Methods

1. Laser optical biometrics

This diagnostic method is aimed at identifying such biometric parameters of the eye as the thickness of the lens, the diameter of the pupil, the depth of the anterior chamber, etc. The data obtained using the biometer data are automatically transmitted to the operating microscope and allow the specialist to choose the most optimal course of cataract treatment for the patient. Also, the method of laser biometrics is actively used in preparing patients for lens replacement surgery

2. Biomicroscopy

The doctor performs diagnostics using a slit lamp – a high-precision ophthalmic microscope. A large magnification allows you to clearly see the optical sections of the eye camera in the transmitted light and determine how much the lens is clouded.

3. Autorefractometry

The use of an autorefractometer makes it possible to determine the curvature of the cornea and refraction (the presence of astigmatism, myopia, etc.), the device works in automatic mode and provides fairly accurate data.

4. Ultrasound examination of the PZO

Such a diagnostic study is carried out in order to measure the length of the anteroposterior axis of the eye using an ultrasound tip. Based on the data obtained, doctors calculate the exact characteristics of the artificial lens for patients who have been prescribed a surgical operation to correct vision.

Treatment

When choosing the tactics of cataract treatment, the doctor is based on visual acuity. In the case of the initial stage with minor opacities of the lens, only annual observation by an ophthalmologist and lifestyle changes are required. The latter implies a more attentive attitude to your diet, giving up bad habits, monitoring the course of concomitant diseases, especially diabetes mellitus. Effective drug therapies for the pathology in question have not been developed. Nevertheless, vitamin drops and tablets may be recommended to the patient, which improve metabolic processes in the tissues of the eye, slowing down the development of opacities.

Cataract surgery involves replacing the affected lens with an artificial intraocular lens. Phacoemulsification is a high–tech, painless surgical intervention. The indication for it is a pronounced decrease in vision, when even with glasses the patient cannot read below the sixth line of the table with letters.

Surgical treatment is performed under local anesthesia. The whole procedure takes about half an hour. The patient is placed on a table, the eyelids are fixed so that he cannot blink. With the help of ultrasound or laser, the clouded lens is divided into several parts, which are removed through such a small incision that suturing is usually not required for its healing. Through it, an individually selected intraocular lens (IOL) is installed in place of the "native" lens, providing clear vision.

It is undesirable to postpone surgery for a long time, since a much clouded and dense lens is technically more difficult and longer to crush, because of this, postoperative edema may go for a longer time. In children, it is advisable to operate on cataracts in the first months of life so that the visual system can develop correctly and amblyopia does not occur. However, the removal of the lens at this age is complicated by the need for general anesthesia and the complexity of calculating the IOL due to the subsequent growth of the eyeball.

Prevention

To exclude congenital cataracts, it is worth paying attention to the prevention of viral diseases in pregnant women, as well as radiation effects on the body.

The occurrence of acquired cataracts can be prevented by timely and rational treatment of diseases that can contribute to its development. When working at industrial, agricultural, chemical enterprises, it is mandatory to strictly observe safety precautions.

Prevention of the development of age-related cataracts should be aimed at general improvement of the body and slowing down the aging process. Drug therapy for the prevention of cataracts is practically not used, due to inefficiency. But if desired, you can prescribe vitamin and antioxidant preparations to patients in drops. The main non-drug methods of prevention include:

1. giving up bad habits;
2. normalization of body weight and prevention of diabetes mellitus;
3. physical education or sports, regardless of age;
4. limiting exposure to the bright sun, protecting the eyes from ultraviolet radiation with sunglasses;
5. prevention and timely diagnosis of other eye diseases;
6. eating enough fresh vegetables, fruits, vitamins A, C, E and antioxidants.

Research

Cataract in the structure of blindness and low vision occupies one of the leading places in the world and, due to its high prevalence, is considered not only as one of the urgent problems of ophthalmology, but also as the most important global medical and social problem. Study: to study the prevalence of cataracts in people over 40 years of age, depending on the type of lens opacity, gender and place of residence of respondents. In the population–based cross–sectional study "Ural Eye and Medical Study", carried out on the basis of the Ufa Research Institute of Eye Diseases, 5098 persons were examined, among them men - 45.0% (2296 people), women - 55.0% (2802 people), city residents – 35.7% (1821 people), rural - 64.3% (3277 man).

The prevalence of cataracts in the Republic of Bashkortostan in the population of people over 40 years old was 42.8%. The predominance of age-related cataracts was revealed in females, as well as in urban residents due to the presence of regional characteristics.

Conclusion

The visual analyzer is a complex and very important tool in human life. Perception of objects of the external world is provided by our eyes. We must be aware of their high importance, try to protect them from unfavorable factors that are waiting everywhere. Therefore, we must observe eye hygiene, do not read at night, work at the computer intermittently and observe workplace safety. Thanks to these simple actions, we will preserve our eyesight as much as possible.

That the causes of deterioration are:

1. congenital and acquired diseases
2. wrong daily routine
3. poor nutrition with nutrients
4. lack of movement
5. excessive training loads
6. unlimited TV viewing, computer
7. incorrect posture8. disadvantages of workplace illumination.

Also, the constant existence with poor eyesight eventually leads to overwork of the entire body. It all starts with the head: the pain is constantly increasing from eye strain. Her general well-being worsens.

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УДК 618

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IMPACT OF SMOKING ON THE DEVELOPMENT OF THE FETUS

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In view of the fact that smoking during pregnancy leads to an increase in perinatal morbidity and mortality, health professionals should be more responsible in promoting a healthy lifestyle among women of reproductive age and adolescent girls.

The problem of tobacco smoking among women occupies one of the first places in the country, since it is the woman who gives birth to the future generation and the health of the nation is in her hands. As you know, the mother, fetus and placenta are an organic unity and this is reflected in various disorders that develop during pregnancy in smoking mothers. Complications of pregnancy, described in women who smoke, are divided into complications in the mother's body, in the body of the embryo, fetus.

Key words: smoking, nicotine, malnutrition.

Шутилова К.А., Якупова Г.И., Васильева Т.А.

ВЛИЯНИЕ КУРЕНИЯ НА РАЗВИТИЕ ПЛОДА

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Ввиду того факта, что курение во время беременности приводит к увеличению перинатальной заболеваемости и смертности, медицинские работники должны более ответственно относиться к пропаганде здорового образа жизни среди женщин репродуктивного возраста и девочек-подростков.

Проблема табакокурения среди женщин занимает одно из первых мест в стране, поскольку именно женщина рожает будущее поколение и здоровье нации находится в ее руках. Как вы знаете, мать, плод и плацента представляют собой органическое единство, и это отражается на различных нарушениях, которые развиваются во время беременности у курящих матерей. Осложнения беременности, описанные у курящих женщин, делятся на осложнения в организме матери, в организме эмбриона, плода.

Ключевые слова: курение, никотин, неправильное питание.

The purpose of the research work

Consolidate, expand and deepen knowledge about the effects of smoking on pregnant women and the fetus.

Research methods

method of theoretical analysis of literary sources on the research topic, synthesis method, comparison method, analysis of studies of individual cards of a pregnant woman and a puerperal, sociological survey method (questionnaires for pregnant women and women in childbirth in antenatal clinics).

The result of the analytical work showed that to date, tobacco use during pregnancy has clearly declined, possibly due to mass media-led tobacco prevention efforts. The study of the

negative impact of smoking during pregnancy led to the conclusion that smoking negatively affects the course of pregnancy, increasing not only the frequency of complications, but also aggravating their severity. The most pronounced negative impact on the course of pregnancy is the impact of bad habits.

The concept of smoking

Tobacco smoking is the process of inhaling tobacco smoke from dried or processed tobacco leaves.

Cigarette smoke contains the alkaloid nicotine, which is an addictive stimulant and causes mild euphoria. The effects of nicotine on the body include the temporary relief of feelings of restlessness, irritability and inability to concentrate. It should be noted that nicotine does not relieve feelings of anxiety, irritability in non-smokers.

Clinical studies have proven that tobacco smoking is associated with diseases such as lung cancer and emphysema, diseases of the heart system.

Planning pregnancy

It was found that if during the process of conceiving a child, one of the spouses smoked tobacco, then the genetic mechanism for the development of the organs of the unborn child suffers. Unfortunately, a woman finds out about her pregnancy only a month after conception, and during this month she did not stop smoking tobacco. From this it follows that the laying and further development of the organs of the embryo occurred "under the degree". Since the placenta is absent early in pregnancy, the fetus gets all the nicotine from the cigarette smoke its mother smoked. Therefore, future parents who are planning a child should not smoke for at least four months before the conception process.

Only in this way, under such a combination of circumstances, the detrimental effect of smoking on the hereditary material of the fetus will be minimal.

Pregnancy in women who smoke

These changes in the mother's body negatively affect the development of the embryo: a child can be born prematurely, with malnutrition and damage to the central nervous system.

With frequent smoking of tobacco, pathologies of the adrenal glands, ovaries, and thyroid gland are found. In pregnant women, therefore, the fetus is exposed to extremely harmful effects: smoking and its metabolites.

The effect of nicotine in cigarettes smoked by pregnant women has been noted in some scientific studies on sudden infant death syndrome. Sudden Infant Death Syndrome during

pregnancy occurs more often by 19%, and after birth - by 22% in smoking mothers compared to non-smokers.

The effect of smoking on the fetus

The toxic effect of nicotine affects the functions of the central nervous system (excitation, followed by inhibition), as well as the activity of the cardiovascular system. Nicotine has an effect on the respiratory center, contributing to an increase in blood pressure and an increase in heart rate.

A toxin found in cigarette smoke causes complications in women who smoke during pregnancy and causes premature abortions. In a survey of 2736 women, it was found that the incidence of prematurity in smokers was 15.9%, and in non-smokers, 11.1%.

Consequences of smoking during pregnancy

Pregnant women who smoke most often give birth to children with developmental disabilities, such as cleft lip, cleft palate, childhood leukemia, placental rupture, severe nutritional deficiencies, and mental retardation.

Smoking in early pregnancy

Smoking in early pregnancy is the most dangerous, as the risk of miscarriage is highest in the first trimester of pregnancy. The newborn has thinned lung walls and is underweight, has a weak respiratory system, and is likely to have asthma in the future.

And the fault is the chronic lack of oxygen, which was present in the fetus due to systematic nicotine poisoning in the first weeks of pregnancy.

Oxygen deficiency negatively affects the formation of the brain, heart, lungs, liver, kidneys, which in the first month are at the stage of inception and for which oxygen is vital, and in the right amount.

Smoking in late pregnancy

Smoking late in pregnancy tends to slow down the development of certain organs.

How does smoking in the last stages of pregnancy affect the development of the child?

1. The fetus does not gain normal weight due to lack of nutrition and oxygen.

2. The fetus may freeze due to a slowdown in the development of the brain, since the substances contained in cigarette smoke adversely affect its development.

3. The reproductive system of the fetus is disturbed.

Tobacco prevention among pregnant women

1. It is necessary to know the whole truth about the dangers of smoking, both active and passive smokers.

2. It is necessary to help occupy yourself with some type of activity, from which the benefits are much greater than from a cigarette.

3. Make a calculation of financial waste on cigarettes. And then discuss whether it is better to spend this money on something more pleasant for yourself.

4. Carrying out extensive anti-smoking propaganda events with the involvement of the media.

CONCLUSIONS OF THE THEORETICAL BACKGROUND OF THE STUDY OF TOBACCO SMOKING IN PREGNANT WOMEN

1. Smoking pregnant women and women in childbirth have a high risk of developing preeclampsia, chronic fetoplacental insufficiency, chronic intrauterine fetal hypoxia.

2. smokers pregnant had more percent premature And newborns With underweight at birth.

STUDY OF TOBACCO SMOKING AMONG PREGNANT WOMEN

We conducted a study of 100 individual cards of pregnant women and puerperas in polyclinic No. 43, antenatal clinic.

After analyzing them, we made the following conclusions:

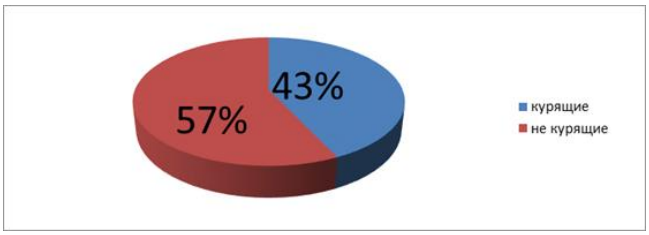

Diagram 1. "The ratio of smokers and non-smokers of pregnant women"

Chart 1 shows the percentage of pregnant women who smoked and did not smoke during pregnancy. From this chart, we can conclude that women who smoke make up a fairly large % of pregnant women. These women are subject to many complications that can affect the development and health of the fetus.

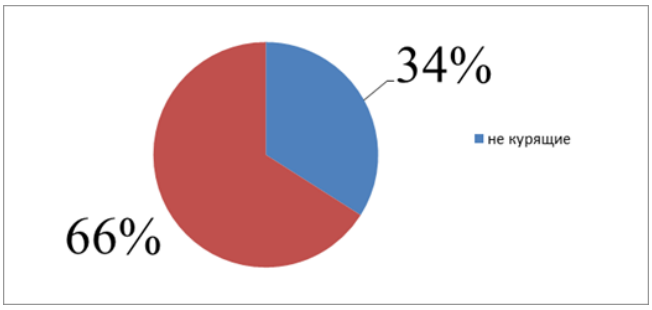

Diagram 2. "Percentage of smokers and non-smokers who had difficulty conceiving"

In Chart 2 we see the percentage of smokers and non-smokers who had and did not have problems conceiving. As a result of smoking, 66% of women have reduced reproductive function, it is much more difficult for them to get pregnant than for non-smokers.

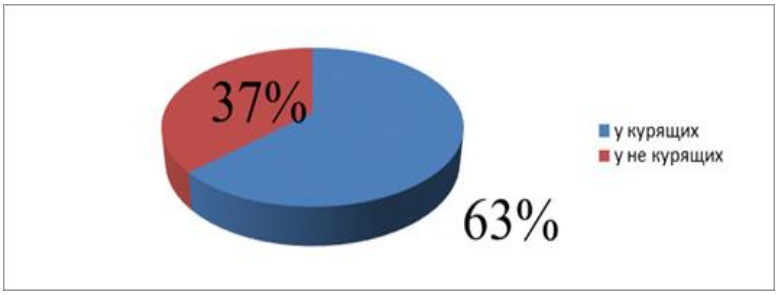

Diagram 3. "Percentage of smokers and non-smokers of pregnant women who have a history of burdened by any chronic diseases"

Diagram 3 shows the percentage of smokers and non-smokers who have a chronic disease history. It can be concluded that in a larger number of women (63%), as a result of smoking, the anamnesis is aggravated by chronic diseases.

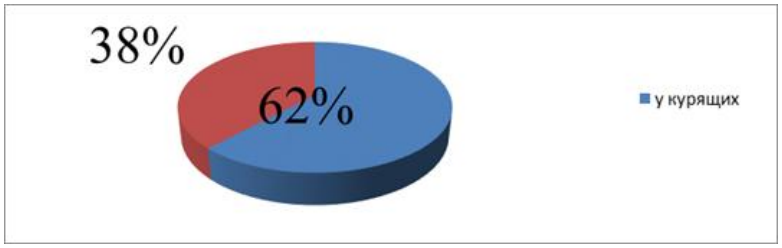

Diagram 4. "Percentage of child mortality in smoking and non-smoking women"

Chart 4 shows the percentage of child mortality among smokers and non-smokers. Obviously, the mortality of children in women who smoke is almost 30% higher than in non-smokers.

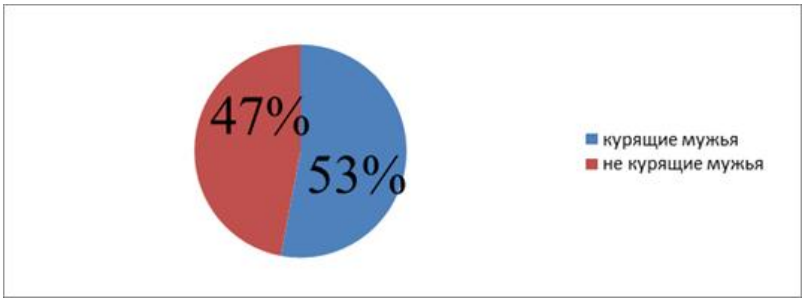

Diagram 5. "Percentage of pregnant women with smoking husbands"

Chart 5 shows the percentage of women who have smoking and non-smoking husbands. We see that 53% of women have husbands who smoke, while 47% have non-smokers. It follows that 53% of women are already passive smokers.

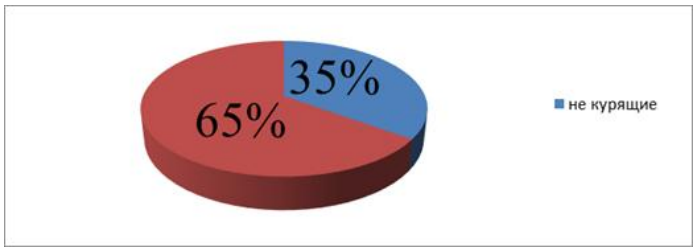

Diagram 6. "Percentage of smoking and non-smoking women whose pregnancy ends in miscarriage"

Chart 6 shows the percentage of smokers and non-smokers whose pregnancy ends in miscarriage. We see that in 65% of women who smoke, their pregnancy ends in miscarriage, which is twice as many as in non-smokers.

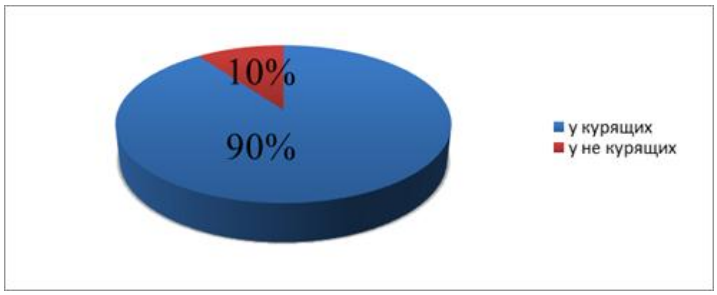

Diagram 7. "Percentage of smokers and non-smokers who have abnormal placenta previa"

Chart 7 shows the percentage of smoking and non-smoking pregnant women who develop an abnormal placenta previa. In 90% of women who smoke, an abnormal placenta previa occurs, which can lead to complications in childbirth.

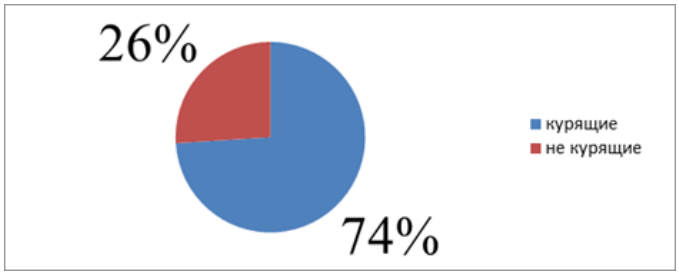

Diagram 8. "Percentage of smoking and non-smoking pregnant women who give birth to premature babies"

Chart 8 shows the percentage of smoking and non-smoking pregnant women who had premature babies. We see that 74% of women who smoke have babies before their due date.

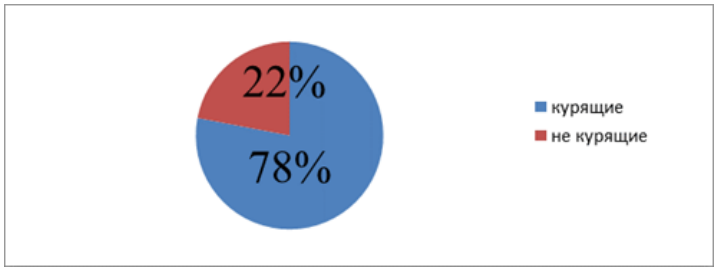

Diagram 9. "Percentage of smoking and non-smoking women whose children are behind in physical development (weight, height)"

Diagram 9 shows the percentage of smoking and non-smoking pregnant women whose children are lagging behind in physical development (weight, height). From the data it can be concluded that in 78% of women who smoke children are lagging behind in physical development, and this can adversely affect further mental and mental development.

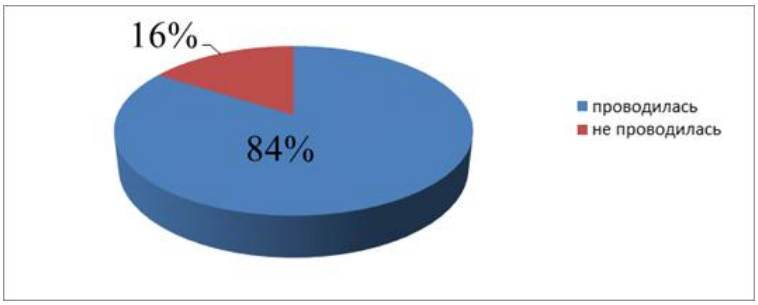

Diagram 10. "Percentage of women with whom a conversation was held and not held about the dangers of smoking"

Chart 10 shows the percentage of women who were and were not interviewed about the dangers of smoking. We see that 84% of women were interviewed about the dangers of smoking.

When processing personal data of pregnant women, it was revealed:

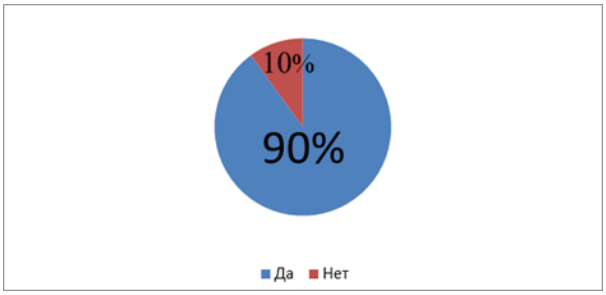

Diagram 1. "Percentage of pregnant women who know and do not know about the dangers of smoking".

Chart 1 shows the percentage of pregnant women who know and who do not know about the dangers of smoking. From this diagram, we can conclude that only 90% are aware that nicotine adversely affects the body, and 10% of women are still unaware of the negative effects of tobacco. From this we can conclude that not all women understand what consequences can await her and her unborn child if she smokes during pregnancy.

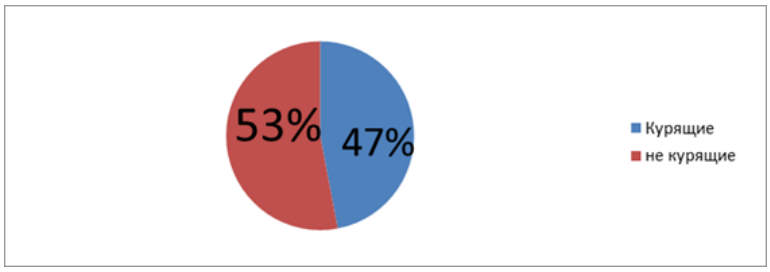

Diagram 2. “Ratio of smoking pregnant women to non-smoking pregnant women”.

Chart 2 shows the proportion of smoking pregnant women to non-smokers. From this chart it follows that 47% of the women interviewed are smokers, and 53% prefer not to smoke. After analyzing this diagram, we can conclude that, nevertheless, knowing about the harmful effects of tobacco on the fetus, women continue to poison their unborn child with toxic substances consciously.

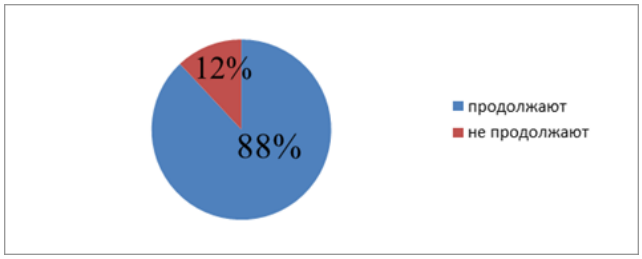

Diagram 3. "The ratio of women who continue and do not continue to smoke during pregnancy".

Chart 3 shows the percentage of pregnant smokers who quit smoking during pregnancy and those who chose to continue smoking. We see that not all women have given up nicotine for the benefit of the unborn baby. 88% of 100% still continued their addiction and pregnancy did not become a hindrance to them.

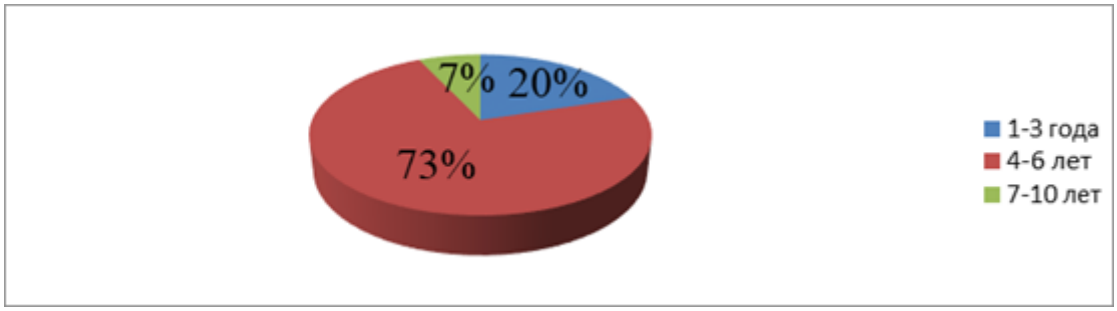

Diagram 4. "Percentage of experience of smoking women".

Chart 4 shows the percentage of smoking experience among women. We see that out of 100% of smokers, 7% have an experience of 7-10 years, which indicates a rather long intake of nicotine in a woman's body, 73% of smokers have an experience of 4-6 years, and 20% with an experience of 1-3 years. After analyzing this diagram, we can conclude that most women smoke for about 4-6 years, which means they have a long-term effect of tobacco on the body. It follows from this that women of reproductive age, even with a long, even with a slight experience of smoking, will have a harder time in fertilizing an egg and in bearing a child. Since the body of women is already affected by toxic substances contained in cigarettes, the body of the unborn child will also be affected by these toxic substances, leading to miscarriages,

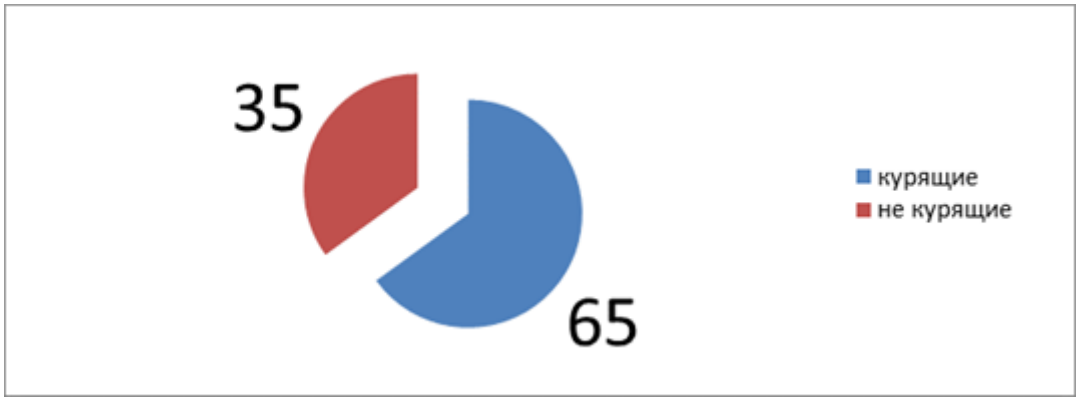

Diagram 5. "The ratio of smoking husbands to non-smokers"

In Chart 5 we see the ratio of smoking husbands to non-smokers. From this diagram, we can conclude that out of 100% of women, 65% of the husband suffers from addiction. Consequently, 65% of women are passive smokers, which can lead to consequences even worse than from their own use of tobacco.

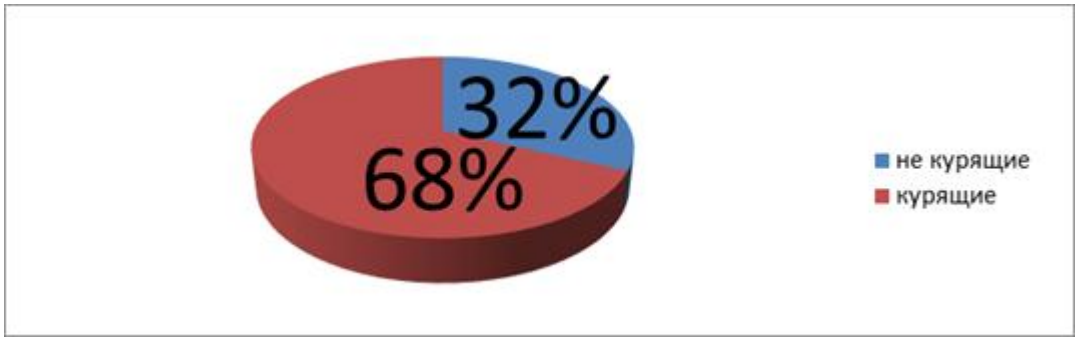

Diagram 6. "The ratio of miscarriages in pregnant women who smoke and non-smokers"

In Chart 6 we see that in 100% of pregnant women, 68% of smokers had miscarriages. As you know, nicotine can provoke miscarriages in the body of pregnant women, both early and late.

We see that 64% out of 100% of the pregnancy passes with some complications. The first cause of complications is tobacco use by pregnant women. These complications include: edema, premature detachment of the placenta, delayed fetal development, abnormalities in the development of the fetus, and so on.

When processing personal data of women in labor, it was revealed:

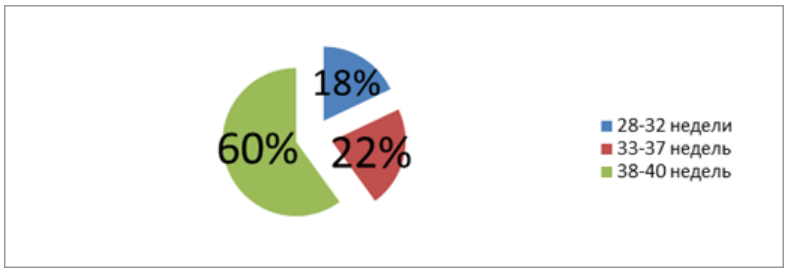

Diagram 1. "The ratio of the birth of children of smoking women at different stages of pregnancy"

In diagram 1, we see the ratio of the birth of children at different stages of pregnancy. After conducting a survey among women in labor, I found out that in 60% of women a child is born full-

term before the deadline of 38-40 weeks. In 18%, the child is born at 28-32 weeks, in 22% the child is born at 33-37 weeks.

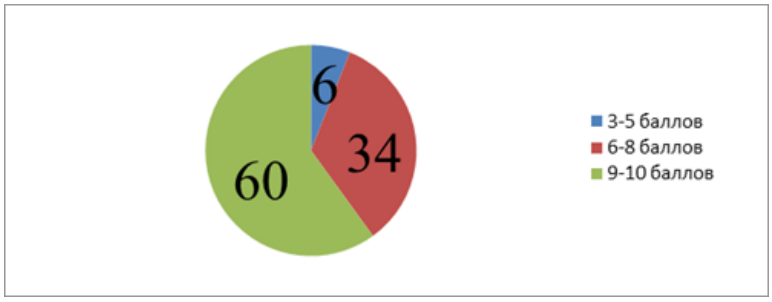

Diagram 2. "Ratio of children on the Apgar scale"

In diagram 2 we see the ratio of children on the Apgar scale. From this chart it follows that 60 women out of 100 had children of 9-10 points, 34 women had children of 6-8 points, and 6 women had children of 3-5 points on the Apgar scale.

Further questions were asked only to women who smoked during and before pregnancy:

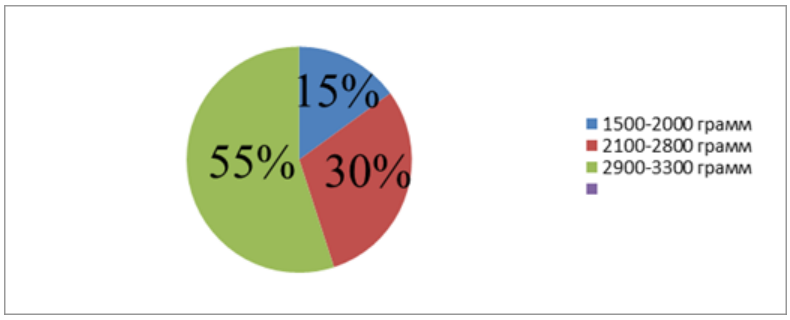

Diagram 3. "The ratio of body weight of children at birth in smoking mothers"

Diagram 3 shows the ratio of body weight of children at birth in smoking mothers. Of 100%, 15% have a body weight of a premature baby 1500-2000 grams, 30% have 2100-2800 grams, 55% have 2900-3300 grams. From this diagram, we can conclude that the mass of children of smoking mothers is much less.

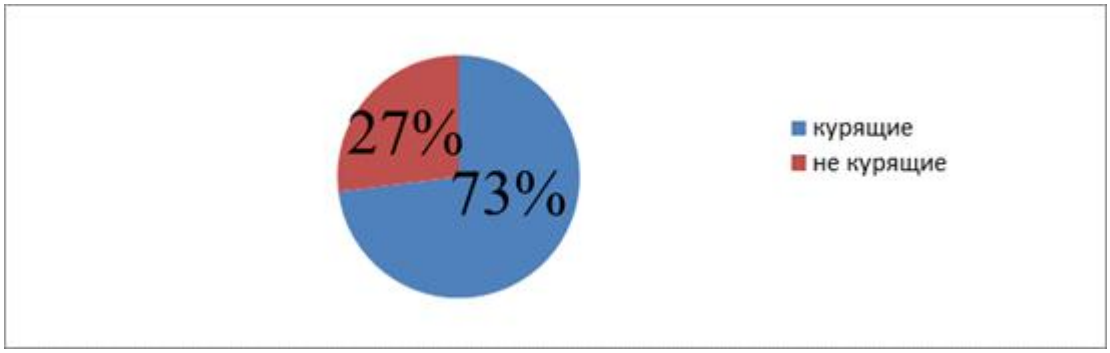

Diagram 4. "The ratio of frequently ill children from smoking and non-smoking women"

Diagram 4 shows that only 27% of non-smoking mothers have children often ill, and children of smokers get sick 3 times more often than non-smokers. This is due to weakened immunity, since even in the womb, immunity is suppressed by toxic substances contained in the woman's body.

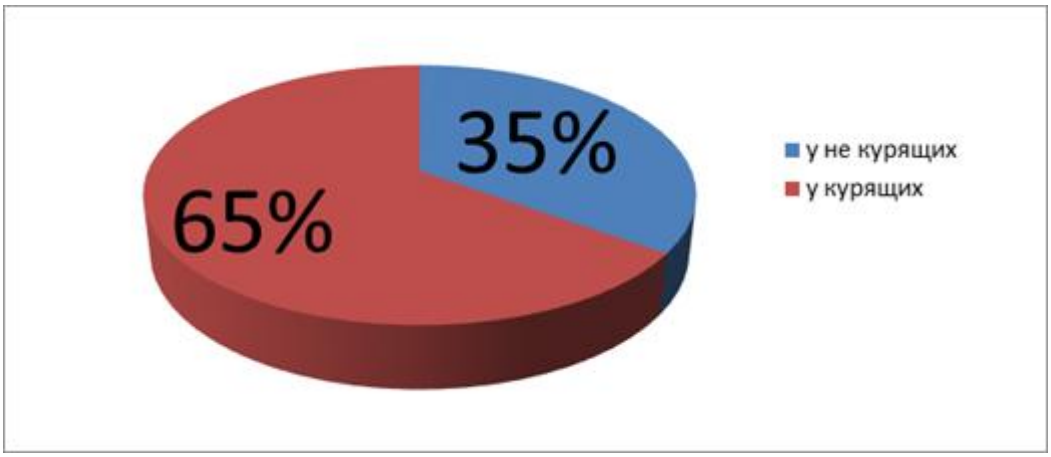

Diagram 5. "The ratio of children born with anomalies from smoking and non-smoking mothers"

Diagram 5 shows the ratio of children born with anomalies to smoking and non-smoking mothers. It can be concluded that out of 100% - 35% of children from non-smoking mothers were born with anomalies, and 65% from mothers who smoked. These 65% include such anomalies as: cleft palate, cleft lip, heart disease, absence of fingers on the limbs, and so on.

We have developed a bulletin on the topic: "The influence of smoking on the development of the fetus." In the course of the survey, we distributed to each woman bulletins for personal study for the purpose of sanitary and educational work.

CONCLUSIONS

1. Based on the results of the analysis of individual maps of pregnant women and women in labor, it can be concluded that adverse pregnancy outcomes are twice as common in smoking pregnant women than in non-smokers.

2. Analysis of individual maps of pregnant women showed that 43% of pregnant women are smokers. These women are subject to many complications that can affect the development and health of the fetus. The mortality rate of children of smoking mothers is 30% higher than that of non-smokers. Miscarriages in women who smoke during pregnancy occur 2 times more often than in non-smokers. In 72% of smoking mothers, children lag behind in physical development.

3. Based on the results of a survey conducted in polyclinic No. 43, a antenatal clinic, it can be concluded that some women, even during pregnancy, do not stop smoking. Of the 100% of women surveyed, 53% turned out to be smokers, and more than half of them did not stop smoking during pregnancy.

4. We have developed a bulletin on the topic: "The influence of smoking on the development of the fetus." In the course of the survey, we distributed to each woman bulletins for personal study for the purpose of sanitary and educational work.

Smoking, unfortunately, is the most common bad habit among pregnant women.

Only 20% of women give up smoking at the stage of pregnancy planning and during it.

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TARGETED DRUG DELIVERY

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In this article, we have reviewed a promising technology - targeted drug delivery, as well as analyzed its effectiveness based on modern research. Current articles have shown the high effectiveness of targeted delivery drugs.

***Key words**:* targeted drug delivery, nanoparticles, micro robots.

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АДРЕСНАЯ ДОСТАВКА ЛЕКАРСТВ

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В данной статье мы осуществили обзор перспективной технологии - адресная доставка лекарств, а также произвели анализ ее эффективности исходя из современных исследований. Актуальные статьи показали высокую эффективность препаратов таргетной доставки.

Ключевые слова: адресная доставка лекарств, наночастицы, микророботы.

One of the promising and rapidly developing areas of modern pharmacology is targeted delivery of medicines. Despite the achievements of medicine in the treatment of a number of diseases, many medications have a serious disadvantage — a negative effect on normal tissues. The use of various targeting methods allows you to reduce these side effects by directing the drug to the right place, due to increased accuracy, high solubility, patency through various barriers of the body.

In traditional drug delivery systems, such as oral or parenteral administration, the drug is distributed throughout the body through the systemic circulation. For most therapeutic agents, only a small portion of the drug reaches the affected organ, for example, with chemotherapy, where approximately 99% of the drugs administered do not reach the tumor site. Targeted drug delivery is aimed at the concentration of the drug in the tissues of interest, while reducing the relative concentration of the drug in the remaining tissues. For example, by avoiding host defense mechanisms and inhibiting nonspecific distribution in the liver and spleen, the system can reach the intended site of action in higher concentrations. Targeted delivery is believed to increase efficiency while reducing side effects.

Targeting methods

There are two strategies for targeted drug delivery to damaged tissues: passive and active. Passive delivery is provided due to the increased permeability of capillaries in the lesion, bioavailability and increased half-life, the ability or inability to penetrate various barriers. Active

targeted delivery is realized when guiding ligands are attached to the surface of the carrier or directly to the drug, specifically binding to damage markers on the membrane of altered cells. Directed drug transport is carried out using molecular vectors, which use peptides, hormones, enzymes, antibodies and glycoproteins. [28]

According to the size of the carrier (guiding component), the following types of targeted delivery are distinguished:

• nanoparticles – delivery using nanocarriers.

• microparticles – delivery using microcarriers.

• drug conjugates with various guiding molecules.

1. Nanoparticles

The variety of variants of nanoscale carriers for medicines can be reflected by the following classification:

• biological and biogenic nanoparticles (enzymes, proteins, macromolecules, ribosomes, viruses);

• polymer nanoparticles (polyethylene glycol, polyglycolic and polylactic acids);

• polymer micelles (carriers of hydrophobic drugs);

• dendrimers (polyamidoamine, polylysine);

• liposomes (small, large and multi-layered liposomes);

• perfluorocarbon nanoparticles (nanoparticles consisting of a liquid perfluorocarbon core coated with a lipid monolayer);

• carbon nanoparticles (nanotubes, fullerenes, graphene, nanodiamonds);

• inorganic nanoparticles (metals such as gold, silver, platinum, titanium, zinc, iron, metal and nonmetal oxides, such as silicon, etc.);

• quantum dots and semiconductor nanocrystals;

• magnetic nanoparticles [28].

Functions of nanoparticles in targeted delivery:

1) protect the medicine from enzymatic and acid-base destruction.

2) enhance the adsorption of the drug in the right tissues with subsequent absorption.

3) protect the medicine from the immune system.

4) improve the patency through histohematic barriers.

5) increase the period of excretion from the body.

6) passively or actively direct the drug, reducing the overall toxicity.

- *Liposomes*

Liposomes are spherical bubbles made of a double layer of lipids with a size of 25-100 nm, filled with liquid. Liposomes are effective because they consist of native lipids and have a high affinity for cell membranes. After contact with the plasma membrane, the contents of liposomes penetrate into the cell during membrane fusion, or along the path of endocytosis.

The antitumor antibiotic doxorubicin was discovered in the 1960s and is widely used in the chemotherapy of metastatic tumors and breast cancer. However, the use of doxorubicin has been limited due to its side effects on the heart. Targeted delivery of this substance to the tumor can solve this problem by reducing systemic toxicity and effects on the heart. The first liposome—based doxorubicin drug introduced into therapy, Myocet, is a doxorubicin salt (10-15 thousand molecules) enclosed in a bilayer lipid bubble. The bilayer is formed by phosphatidylcholine and cholesterol, which are contained in cell membranes. The advantages of "Myocet" over free doxorubicin are slower excretion from the body and a different distribution of the drug in the body. At the same time, the dangerous accumulation of the antibiotic in the heart is significantly reduced. [27]

Other liposomal drugs approved by the FDA:

• Marqibo (Onco TCS) active ingredient - vincristine – used in acute lymphoblastic leukemia (2012).

• Onivyde (Merrimack) ® active ingredient - irinotecan – used in pancreatic cancer (2015), etc [26].

- *Polymer nanoparticles*

To create polymer nanoparticles, polylactic and polyglycolic acids, polyethylene glycol (PEG), polycaprolactone, etc., as well as their various copolymers are used. Polymer particles have a number of advantages: biocompatibility, biodegradation ability, functional compatibility. At the same time, PEG itself is often used to increase the stability of various carriers and to prevent the capture of drug-loaded nanoparticles by the organs of the reticular-endothelial system. Such particles are formed by binding the drug to a polymer particle (for example, PEGylation). [24], [25]

• Adagen/pegademase bovine (Sigma-Tau Pharmaceuticals) ® - enzyme pegylated adenosine deaminase – used in severe combined immunodeficiency (SCID) (1990).

• Eligard (Tolmar) ® - Leuprolide acetate and polymer (PLGH (poly (DL-lactide-coglycolide)) - Prostate cancer (2002).

• Macugen/Pegaptanib (Bausch & Lomb) ® - PEGylated anti-VEGF aptamer (vascular endothelial growth factor) aptamer - Macular degeneration, neovascular age-related (2004) [26].

- *Viruses*

These are nanoparticles from inactivated viruses modified with various directional, protective, therapeutic, and other molecules. A distinctive feature of these systems from the rest is

that they can be used as a means of delivering not only drugs, but also DNA to target cells. This opens up great opportunities in medicine, such as vaccination and gene therapy.

• Zolgensma is a gene therapy drug used to treat spinal muscular atrophy. The AAV9 virus carrying the synthetic SMN1 gene is used as a vector. Viruses, entering the human body, penetrate into a-motor neurons and deliver the normal SMN1 gene to them.[23]

• Roctavian, is a gene therapy for the treatment of hemophilia A. The AAV5 virus is used as a vector, which delivers the human coagulation factor VIII gene to hepatocytes. [22]

2. Microparticles

The microparticles used in targeted delivery include modified bacteria, cells, cell particles and their hybrids.

In order for these systems to become directional and capable of movement, they are first modified in various ways, while obtaining biohybrid "microrobots". Various microorganisms, including bacteria, microalgae, and spermatozoa, erythrocytes have been used to manufacture various biohybrid microrobots with advanced medical functions, such as autonomous control with environmental stimuli for targeting, navigation through narrow gaps and accumulation in necrotic areas of the tumor environment. The advantages of these systems over nanoparticles are that living organisms used as drug carriers are capable of active movement, chemotaxis, phototaxis and other types of taxis, react to changes in pH, pressure, temperature (some nanoparticles are also capable of this), change their phenotype as needed, etc [21].

3. Drug conjugates with directional molecules

In the development of anti-cancer drugs, an approach using hybrid vector-type constructs (protein, oligonucleotide, peptide, ligand) + chemotherapeutic agent linked to each other has become widespread. The selectivity of conjugate action is achieved either due to the presence of specific receptors on the surface of tumor cells that are "recognizable" by a vector protein or antibody, or due to a significantly higher level of vector protein receptors on the surface of tumor cells compared to normal ones. Oncophetal proteins, transferrin, monoclonal antibodies to specific tumor antigens, hormone-like peptides, aptamers and other antibody mimetics (DARPin, affibody, etc.) are actively used as vectors.

Conjugation of the drug with the vector can be carried out in several ways: by chemical crosslinking (in the simplest case, disulfide or thioester bond) of polyethylene glycol (PEG) or polypeptide linker, avidin–biotin technology, as well as genetically engineered methods (creation of recombinant proteins).

- *Antibody-drug conjugates*

They are a complex of an antibody and a drug, the antibody is the "deliverer" of the drug, and the drug penetrating into the cancer cell causes its death or oppression.[4] A monoclonal antibody is obtained using the method.

Common antibody-drug conjugates (ADCs) are used in targeted therapy of various types of tumors (approved by the FDA), for example:

• Mylotarg (gestuzumab ozogamycin) — used for the treatment of CD33 positive acute myeloid leukemia - a conjugate of a monoclonal antibody to CD33 gemtuzumab and a drug of the class calicheamycin, ozogamycin.[5]

• Kadcyla (trastuzumab emtanzin) — used in metastatic HER2 positive breast cancer – conjugate of the anti-HER2 monoclonal antibody trastuzumab and the drug emtanzin.[6]

- *Antibody-mimetic-drug conjugates*

Another type of drugs is a drug conjugate with a non-immunoglobulin guide frame.

Non-immunoglobulin frameworks are currently a new approach in targeting and are therefore under development, here are some of them: Affibody, Affilins, DARPins, Monobodies, Aptamers. Common advantages over antibodies are better solubility, penetration into tissues, stability to heat and enzymes, and relatively low production costs.[3]

An example based on the DARPin guide module is the targeted recombinant toxin DARPin-PE40 in which the drug is the effector domain of pseudomonas exotoxin A, and the guide is DARPin_9–29, which has a high affinity for HER2 markers on tumor cells. The relative viability of such tumors with the introduction of 10 nM of this drug is 40%.[2]

Aptamers are short sequences of artificial DNA, RNA, or XNA that can bind to a specific target molecule. Example: a DNA–based Sgc8 drug using a PTK7 target, a conjugated drug - doxorubicin [1].

Purpose of research

Consider possible ways of targeted drug delivery, evaluate their effectiveness and conclude about possible use in the treatment of various diseases in the future.

Materials and methods

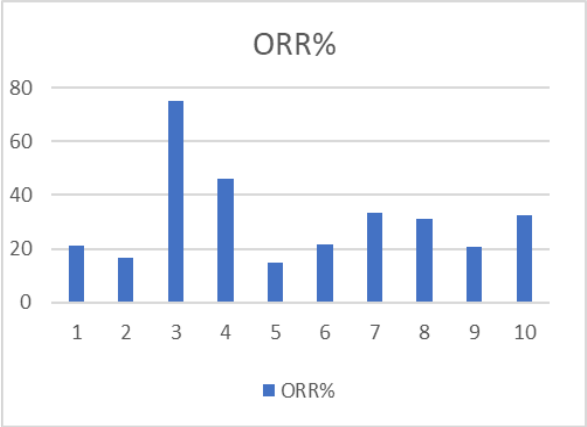
In this article, actual scientific works of scientists from all over the world were used, the statistics of the effectiveness of many tested drugs were copied.

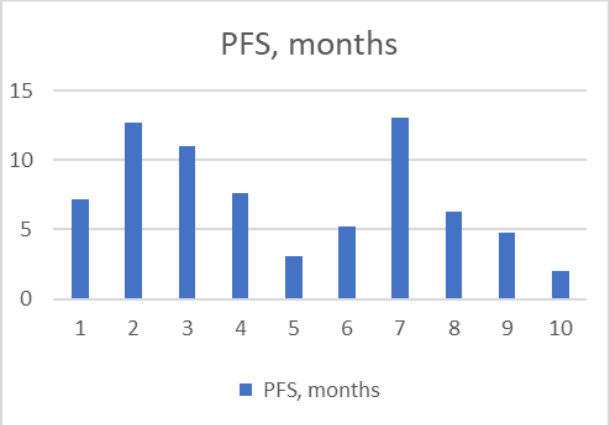
Results and discussion

In the course of our research, we conducted an analysis of modern targeted delivery drugs based on data obtained from current scientific papers.

1. Liposomes

In the authors showed the effectiveness of pegylated liposomal doxorubicin and its difference from pure epirubicin. A total of 1,213 patients with breast cancer were included [7]. The 3-year survival rate of patients receiving chemotherapy was 94.9% for the liposomal doxorubicin group and 95.4% for the pure epirubicin group. Statistical analysis showed no obvious differences in antitumor efficacy between pure epirubicin and liposomal doxorubicin, but showed a predominance of general toxicity and strong side effects when using a pure drug. Approximately the same results were obtained by the authors of these articles [8], [9], [10]. Accordingly, the use of PEGylated liposomes reduces the overall toxicity, due to passive targeting.





ORR (avg)= 31,3%, PFS (avg)= 7,29 months.

These diagrams show ORR and PFS when using liposomal doxorubicin in phase II and III clinical trials. Statistics from 10 studies were taken [15].

- ORR (response rate) is the objective response rate, "the proportion of patients with a decrease in tumor size by a predetermined amount and over a minimum period of time"
- PFS (PFS) is progression-free survival.

2. Polymer nanoparticles

In the efficacy of the drug Eligard (Tolmar) - Leuprolide acetate and polymer (PLGH (poly (lactic-co-glycolic acid))) was investigated. In total, 645 patients with prostate cancer at various stages of the disease were included in the study [11]. After 12 months of hormone therapy with the drug Eligard 45 mg, the level of PSA in the blood serum decreased by an average of 82% (from 41.4 to 7.65 ng/ml). Testosterone levels < 20 ng/dl were achieved in 89% of patients. An analysis of the quality of life of patients with prostate cancer undergoing therapy with the drug Eligard 45 mg showed an improvement in this indicator against the background of treatment, confirming the effectiveness and safety of this drug. In other countries, approximately the same efficacy of this

drug is shown [12,13]. The effectiveness of the Eligard is achieved due to the prolonged action, which is based on the release of the drug from the nanocarrier of biodegradable polymer particles.

3. Viruses

In [14], the authors investigated the drug Zolgensma as a gene therapy for spinal muscular atrophy in children. Therapy with the drug Zolgensma (onasemnogen abeparvovek) was received by 41 children aged 5 to 47 months. Adverse events (hyperthermia, decreased appetite, nausea, vomiting) have been reported in all patients with varying degrees of severity. The average improvement in children's motor abilities increased significantly (CHOP INTENT = 7.1/9.4 points, HINE-2 = 3.3/4.4 points). The efficacy and safety of the use of the drug onasemnogen abeparvovek in real clinical practice in the treatment of spinal muscular atrophy for children have been demonstrated. Other work has also shown the relative safety and good efficacy of this drug [16].

4. Micro-robots

In [17] in 2019, bioengineers from the Zurich Technical School constructed a magnetic implantable micro-robot for the treatment of the retina with a size of 600 microns. Scientists have demonstrated the high controllability of the device and the gradual release of the drug, which makes it possible to use their development as a prototype of a real device for the treatment of various eye pathologies in humans.

Another article describes the effective delivery of antisense nucleotides opsonized on erythrocytes to the liver [18].

The paper describes the creation, research and possibilities of new bioengineered genetically and structurally modified non-immunogenic bacteria [19]. The authors were able to create genetically modified strains of E. coli BL21 controlled by an alternating magnetic field with structural features. Numerous modifications truly transform these bacteria into micro robots capable of performing a huge number of different tasks: controlled movement in vessels, cavities, intercellular substance along and against the flow, targeting specific markers, high survival and low immunogenicity, high permeability through barriers, large drug load, online visualization of pathology, the ability to control the microenvironment for the account of controlled expression, the possibility of treatment in several ways at once. The authors showed high efficiency of bioengineered bacteria against colon cancer, low immunogenicity and toxicity.

5. Antibody-drug conjugates

In [19], a study was conducted on the efficacy and safety of the drug Kadcyla (trastuzumab-emtanzine). 991 patients participated in the study. 496 were treated with lapatinib and capecitabine, 495 - T-DM1. The obtained results showed a significant improvement in PFS and OS in the T-DM1

group. PFS in this group was 9.6 months versus 6.4 months in the L+K group. OV was also significantly higher in the T-DM1 group: 30.9 months vs. 25.1 months in the capecitabine + lapatinib group; response rate (ORR) 43.6% vs. 30.8%. Tolerance of T-DM1 was better than the combination of capecitabine and lapatinib. Adverse events of grade III and IV toxicity were observed more often in the capecitabine + lapatinib group than in the T-DM1 group (57% vs. 41%). Another study also showed high efficacy in the treatment of HER2+ tumors [20].

Conclusion

Thus, targeted drug delivery is currently one of the most promising and most effective directions in the treatment of many diseases. Treatment of cancer and other diseases, gene therapy, vaccination, improvement of the quality of life - all these are the opportunities of the future that can be provided by the targeted delivery systems.

The number of publications on the topic of targeted drug delivery is constantly growing. In 2017, more than two thousand such publications were published, and 17 clinical trials were conducted. By 2023, the number of publications on the topic of liposomes – 2263, nanoparticles – 9657, nanocarriers – 5735, nanoparticles – 14074, Polymeric nanoparticles – 4373, targeted drug delivery – 8678 – for all time, 785 – for the last year, according to РИНЦ.

To date, small startups remain at the forefront of the development of nanocarriages, while large pharmaceutical companies bypass this topic. The reason is the high cost of producing drugs. However, a more accurate calculation of the cost of treatment, including hospitalization and patient care during chemotherapy, showed that the use of nanoparticle-based drugs leads to significant savings. Apparently, the number of such studies is not yet large enough to encourage pharmaceutical giants to enter this market. However, the situation is already changing, and by 2030, the market for drug delivery technologies is expected to grow by 20% compared to the state of 2022 [29].

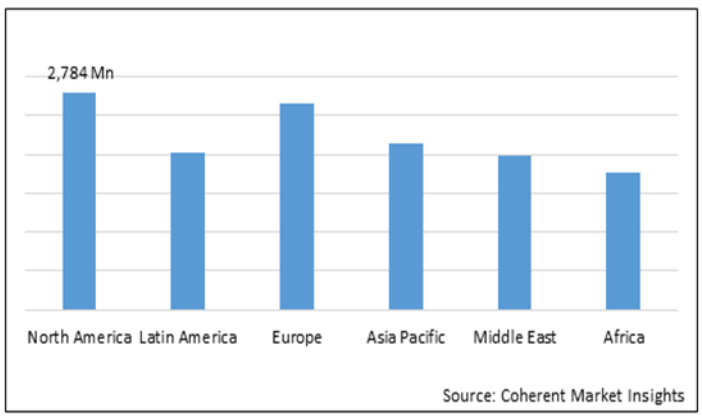


Fig.1. The share of countries in the global market of targeted delivery drugs, in millions of dollars

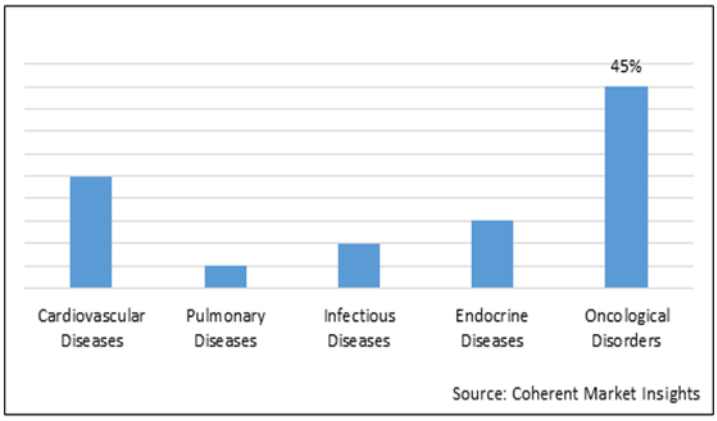


Fig.2. The share of targeted delivery drugs by type of diseases

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ANALYSIS OF THE MAIN ASPECTS OF THE ATTITUDE OF PHARMACY VISITORS TO ADVERTISING OF PHARMACY GOODS

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The purpose of this study was to analyze the information needs of pharmacy visitors as the main target audience for advertising of pharmacy goods and to analyze the main aspects of their attitude to this advertisement. It has been shown that, in general, respondents approve of the advertising of pharmacy goods, but at the same time indicate that they primarily mean consultations of healthcare professionals as the main source of information about these goods.

Key words: advertising, pharmacy goods, population, attitude.

Ушакова Е.В., Косолапова С.Р., Горелова Д.В.

АНАЛИЗ ОСНОВНЫХ АСПЕКТОВ ОТНОШЕНИЯ ПОСЕТИТЕЛЕЙ АПТЕК К РЕКЛАМЕ ТОВАРОВ АПТЕЧНОГО АССОРТИМЕНТА

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Целью данной работы было исследование информационных потребностей посетителей аптек как базовой целевой аудитории рекламы товаров аптечного ассортимента, а также анализ основных аспектов их отношения к ней. Показано, что, в целом, респонденты одобряют рекламу аптечных товаров, но в то же время указывают, что, в первую очередь, в качестве основного источника информации об этих товаров они рассматривают консультации специалистов в сфере здравоохранения.

Ключевые слова: реклама, товары аптечного ассортимента, население, отношение.

Currently, the pharmacy segment continues to grow in the pharmaceutical market of the Russian Federation [1,2]. It should be noted that modern pharmacies have significant potential both as a place for the dispensing of advertising of medicines [3,4,5], and for their direct sale. Therefore, one of the most important aspects that pharmacies should strive to comply with is to match the preferences of their customers as much as possible. The preferences of pharmacy visitors that can ultimately contribute to the formation of specific pharmacies as leaders in this segment of the pharmaceutical market.

Pharmacy goods can be advertised in various sources [6,7,8], which can lead to an increase in their sales. It should be noted that the Russian government pays special attention to the rules for advertising pharmaceutical products as a special category of goods [9,10].

Obviously, to achieve maximum effectiveness, such advertising should be directed to the appropriate target audience. At the same time, for the normal functioning of many pharmacies, it is important that advertising of pharmacy goods, incl. created by pharmacies independently, does not

cause a negative attitude among consumers. Therefore the study of the main aspects of the attitude of advertising of pharmacy goods is of great interest at present.

Purpose of the work – analysis of the information needs of pharmacy visitors as the main target audience for advertising of pharmacy goods and analysis of the main aspects of their attitude to this advertisement using a sociological survey.

Materials and methods. To achieve this goal of the study, we have carried out a sociological survey using questionnaires specially developed by us for this purpose. This survey has involved 160 visitors to pharmacies in the Ufa city. 82% of respondents are women.

At the same time, most of the study participants (61%) are young guys and girls from 18 to 26 years old. 42% of respondents have higher education in various fields, 31% at the time of the study are students of different universities, 19% have completed secondary vocational education. Working young people and students were the majority of the respondents.

Results and discussion. As a result, it turned out that more than half of the respondents are influenced by advertising of pharmacy goods in one way or another. Only 22% believe that they are completely immune to advertising. At the same time, only 9% of respondents answered that advertising provides them with a full amount of information about the pharmacy goods they are interested in.

At the same time, it should be noted that, despite the impact of advertising, the majority of respondents answered that they would purchase the advertised pharmacy good only after a preliminary consultation with a physician (29%) or a pharmacist (38%).

These results are also confirmed by the respondents' answers to the following question, according to which the main sources of information about these goods are healthcare professionals (67%). In addition, the majority of respondents noted that pharmacists in almost all cases provide customers with the necessary information about pharmacy goods: most often about the dosage of medicines (68%), how to use pharmacy goods (53%) and specific aspects of their storage (39%).

It is also necessary to note the case of considering a pharmacy as a place for advertising medicines, i.e. combinations of their dispensing and advertising. The issue of advertising medicines, manufactured in the condition of pharmacies has been debatable for a long time.

We believe that the opinion of the population about the possibility of their advertising is of great interest. Thus, about half of our respondents (52%) believe that the need for advertising these medicines is currently weakly expressed. Most likely, this is due to the fact that in most cases, our respondents tend to purchase and use industrially produced medicines. Perhaps in the future this

situation will change after the adoption of new legislation regulating the possibility of advertising the medicines in question.

It is interesting that the majority of respondents are interested in advertising additional services in pharmacies along with medicines. Thus, the most popular among them are services for measuring temperature, blood pressure, consultation with an ophthalmologist, a cosmetologist, as well as some small invasive procedures: such as measuring glucose and cholesterol levels in the blood.

It should also necessary to emphasize that for 89% of our respondents, the service of pharmacies for delivery of medicines to their homes is attractive. However, it should be noted that at present not-all pharmacies have the official right to deliver dispensed medicines to customers at home.

Conclusions. The results of this study have been showed that, in general, the respondents approve of the advertising of pharmacy goods. At the same time, respondents have been indicated that they primarily mean consultations of healthcare professionals as the main source of information about these goods.

Also, the participants of the study have been noted that pharmacists in almost all cases provide them with all the necessary information about the pharmacy goods of interest to them during pharmaceutical consultations in pharmacies.

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HERRING HELMINTHIASES

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There are natural foci of helminths in some regions, especially in the Far East, a large number of fish are infected. Lake and river fish are also often infected. The greatest danger to humans is a raw food diet, eating dried fish, as well as homemade salting without observing technological standards. In the Gafuriisky district, the assortment of fish in stores is quite wide - these are mackerel, pollock, capelin, cod, notothenia, haddock, pink salmon, etc. Smoked fish products, cleaned and well processed. In the retail network, herring of weak salting is quickly sold out. But some herring specimens are infected. Ordinary buyers rarely think about this problem, there are practically no cases of returning fish in stores. Thus, a large number of the population comes into contact with helminths of fish, including herring.

Key words: helminthiasis, andinvasion, anisacidosis.

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ГЕЛЬМИНТОЗЫ СЕЛЬДИ

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Существуют природные очаги гельминтов в некоторых регионах, особенно на Дальнем Востоке большое количество рыбы заражено. Озерная и речная рыба также зачастую заражена. Наибольшую опасность для человека представляет собой сыроедение, употребление в пищу вяленой рыбы, также домашнего посола без соблюдения технологических нормативов. В Гафурийском районе в магазинах ассортимент рыбы достаточно широкий – это скумбрия, минтай, мойва, треска, нототения, пикша, горбуша и др. Многие рыбные блюда перед употреблением подвергаются термической обработке. Копченая рыбная продукция, очищена и хорошо обработана. В розничной сети быстро раскупается сельдь слабого посола. Но некоторые экземпляры сельди заражены. Обычные покупатели редко задумываются над этой проблемой, случаев возврата рыбы в магазинах практически нет. Таким образом, большое количество населения контактирует с гельминтами рыб, в том числе сельди.

Ключевые слова: гельминтозы, инвазионность, анизакидоз.

Purpose of work

To study the literature on this topic. Investigate herring commercially available in the retail network for the presence of helminths. To identify the compliance of the quality of fish with the standards. To check theinvasiveness of helminths.

Materials and methods

In order to identify the level of occurrence of helminths in weak salted herring sold in the retail network, we selected samples using the envelope method. 5 samples were taken in stores

located in different parts of the village of Krasnousolsky, and the most visited by the local population.

Then an autopsy was performed with a sharp knife, and a visual axisof theinternal organs and body cavity, when helminths were detected, observation was carried out under a microscope, drawings and photo frames were made.

So, at the opening of sample number 1, worms were found coiled in a ring in adipose tissues.

The worm was separated from the tissues using a preparation needle. Placed on a glass slide, prepared a temporary drug. Examined visually on a dark background, as well as under a microscope.

Sample number 2 was studied. No helminths were found in sample No. 2. We drew attention to the strongly decomposed liver.

Sample number 3 turned out to be the most contaminated. It is difficult to count the number of worms. Visually you can see that there are a lot of worms in the body cavity of fish. Moreover, the worms do not lie freely in the cavity, but are located under the mucous membranes of the internal organs. The color of the worms in sample No. 3 is darker than in the rest of the samples. Microdigging results.

Sample number 4. We also found helminths. Worms, rolled up in a ring.

Sample number 5 Prepared a temporary micropreparation. We examined the micropreparation under a microscope.

Results and discussion

Table 1

Sample data

	Sample № 1	Sample № 2	Sample № 3	Sample № 4	Sample № 5
Quantity	2	Not Detected	A lot, more than 20 pcs.	3	6
Description	rolled into a ring, inside adipose tissue	The liver is completely decomposed, the rest of the organs are integral.	rolled into a ring, on the surface of the intestine	rolled into a ring, in the liver	rolled into a ring, on the surface of the intestine

According to external signs, the helminths we found are most similar to anisakid roundworms, which cause the disease anisacidosis.

In 4 out of five samples, i.e. in 80% of cases, the herring specimens studied by us contain roundworms in the internal organs. Only in 20% of cases there is clean, not infected fish.

For clarification, we turned to the Chief Sanitary Doctor of the Russian Federation. Our letter was forwarded to the Republican branch and received a response from the deputy head of the Office of the Federal Service for Supervision of Consumer Rights Protection that the drug contaminated with helminth "Anisakid" is dangerous for use. All fish on sale is subject to veterinary control. Infected fish is not allowed for sale.

They also appealed for clarification to the Central District Hospital of the Gafuriisky district, where they confirmed that no cases of anisacidosis were recorded in the village.

Using the capabilities of the Internet, we contacted the fishing vessel "Master". In the course of correspondence, we were provided with information about the process of processing herring.

After catching, on the vessel the fish is sorted by size, placed on metal baking sheets, poured with fresh water and frozen. Periodically, another vessel with a refrigerator approaches the vessel, where the products are reloaded for transportation to land. We were provided with unique photographs from the ship. (Figs. 1 and 2)

Fig. 1. Photo from the ship.

Fig.2. Photo from the ship.

We contacted the Medical Information and Analytical Center of the Ministry of Health of the Republic of Bashkortostan in order to find out the number of cases of helminthiasis from 2018 to 2022. The following statistics were obtained (Fig. 3).

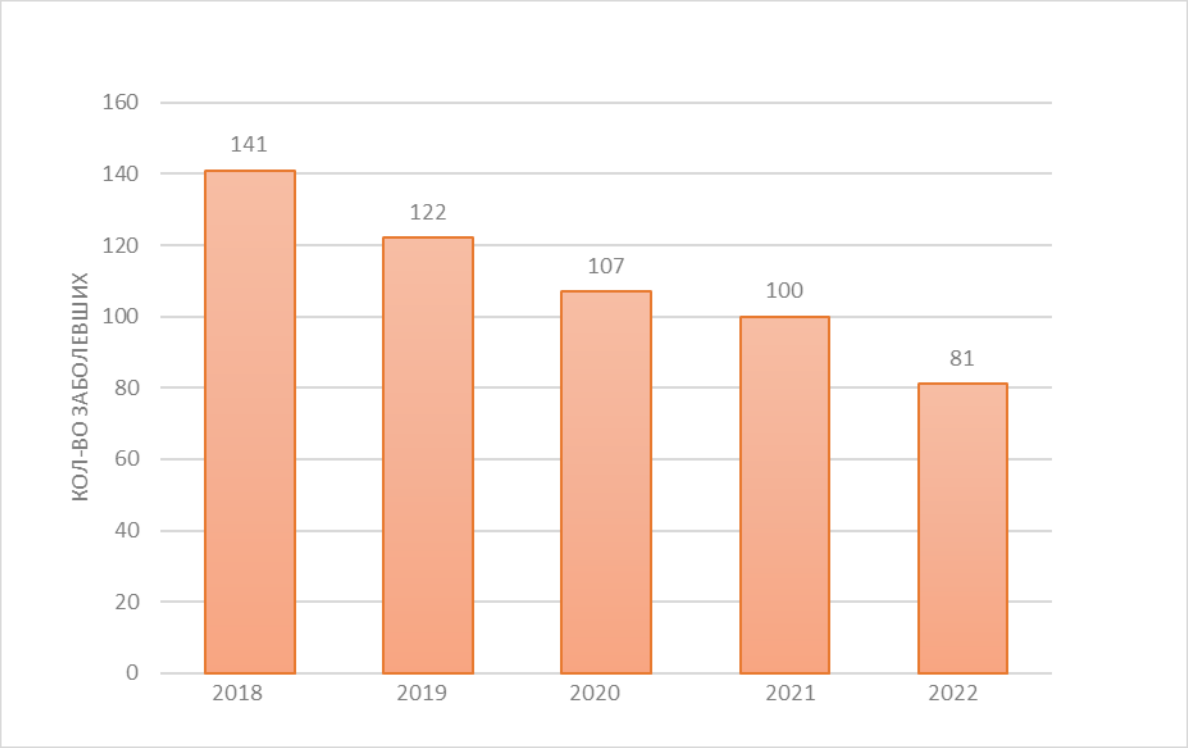

Fig.3. Statistics on the incidence of helminthiasis.

Conclusion and conclusions

Man is a part of living nature and consists in complex relationships with other organisms. Helminths, one of the sources of which is fish, pose a great danger to public health.

In fact, in the course of the study, they were convinced that herring really contains helminths.

If the technology of cooking fish is not observed (insufficient heat treatment, improper salting, raw food), helminths can enter the human body. And only proper processing of fish can ensure their death.

According to the World Health Organization, more than 4.5 billion people in the world are infected with parasitic diseases. Infectious and parasitic diseases annually claim 15-16 million human lives

In order to prevent helminthiasis, we urge everyone to follow the rules of hygiene, monitor the quality of food consumed, be attentive to their health and the health of their family.

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MEDICAL AND SURGICAL TREATMENT OF CHOLELITHIASIS

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The main purpose of the study is to get acquainted with the full characteristics of cholelithiasis.

Key words: Gallstone disease; course of the disease; treatment; diet for gallstone disease; gall bladder resection; principles of treatment; medications used.

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МЕДИКАМЕНТОЗНОЕ И ХИРУРГИЧЕСКОЕ ЛЕЧЕНИЕ ЖЕЛЧНОКАМЕННОЙ БОЛЕЗНИ

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Основная цель исследования-ознакомиться с эффективностью лечения желчнокаменной болезни

Ключевые слова: желчнокаменная болезнь; течение болезни; лечение; диета при желчнокаменной болезни; удаление желчного пузыря; принципы лечения; используемые препараты.

Relevance

Gallstone disease is a disease of the hepatobiliary system characterized by the formation of gallstones (concretions) in the gallbladder, common bile duct or intrahepatic bile ducts. Cholelithiasis is found in 20% of the total population of developed countries, more than 500 thousand cholecystectomies (operations to remove the gallbladder) are performed every year in the world. The disease is associated with genetic factors and nutritional characteristics, namely, eating a large amount of fast carbohydrates. The disease develops much more often in women. Treatment is carried out by gastroenterology surgery.

The purpose of the work

To characterize the manifestation and treatment of the disease.

Materials and methods

Results and survey: as mentioned, women suffer from cholelithiasis 2-3 times more often than men, while there is a significant increase in the disease in children and adolescents. More often, the formation of concretions in the gallbladder is observed in people aged 40-50 years. Below is a diagram that reflects the difference in incidence between women and men.

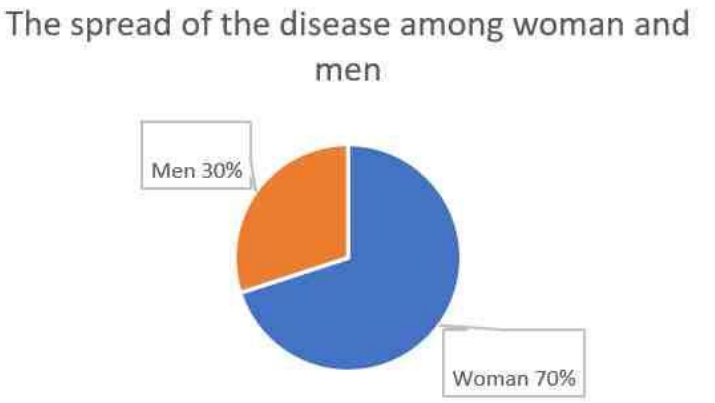

Fig.1. The spread of the disease among woman and men

Risk factors for cholelithiasis:

1. Gender
2. Obesity
3. Frequent overeating
4. Prolonged refusal to eat
5. Sedentary lifestyle
6. Violation of lipid metabolism
7. Genetic predisposition
8. Diabetes mellitus
9. Age over 40
10. The use of hypocholesterolemic drugs

The mechanism of the disease.

The presence of three factors leads to the formation of stones:

1. secretion of "lithogenic" bile by the liver;
2. the existence of centers for subsequent crystallization;
3. stagnation of bile in the gallbladder, which provides conditions for the growth and enlargement of crystals.

Based on many years of practice, the researchers concluded that this disease can occur both asymptomatically and with pronounced symptoms.As already mentioned, the disease may have a latent course, gallstones are detected accidentally - during a medical examination for another reason. With an asymptomatic course of GI, it is most advisable to adhere to the tactics of monitoring the patient without active treatment. In the absence of symptoms, the risk of their

appearance or the development of complications, which would require surgical treatment, is low (1-2% per year).

Basically, with severe symptoms, the disease is characterized by dull aching pain in the right hypochondrium 1-1.5 hours after eating fatty foods or shaking (for example, in a car or after running). The pain radiates into the shoulder blade, back.

As a treatment, a special diet is prescribed, which includes the consumption of vegetable products, lean meat (veal, chicken breast) and fish (cod, pike), cereals, vegetable purees and soups, dairy and fermented milk products with a low percentage of fat content.It is necessary to abandon confectionery, alcohol, fresh bread, coffee and cocoa, sausage products, legumes, sour fruits (Antonov apples, cranberries, citrus fruits).

With cholelithiasis, choleretic drugs are prescribed that enhance the formation of bile, improving its rheological properties and accelerate the excretion of bile by increasing the tone of the gallbladder and relaxing the excretory pathways and sphincters (allohol, cholenzyme, hydroxymethylnicotinamide, sodium salicylate, phenipentol). Allohol has cholekinetic and choleretic effects. The cholekinetic effect is to stimulate the outflow of bile and prevent its stagnation, and the choleretic effect is to improve the secretion of bile evenly throughout the day. Normalizing the process of bile formation, Allochol promotes: restoration of liver function; contractile activity of the gallbladder, and, as a consequence, the release of bile into the intestinal lumen; penetration of water and electrolytes from the blood into the formed bile, improving its flow through the intrahepatic ducts and further along the bile ducts.

Anti-inflammatory and painkillers (ibuprofen, diclofenac, analgin, paracetamol).

Antispasmodic drugs are used to relieve pain.Due to the existing connection of intestinal motility and biliary tract, drugs that normalize intestinal motility and simultaneously reduce visceral hypersensitivity, in particular mebeverin and trimebutin, are effective in the treatment of some patients. Mebeverin is characterized by selectivity of action on smooth muscle cells of the gastrointestinal tract (gastrointestinal tract), absence of cholinergic effects, vasodilating and cardiotropic effects. Accumulation of mebeverin in the body does not occur.Studies have shown that this drug has a unique mechanism of action: it removes spasm, but does not prevent the contraction of smooth muscles in response to appropriate cholinergic stimuli, which eliminates the atony of the sphincter and avoids the throwing of intestinal contents into the biliary tract.This effect of mebeverine distinguishes it favorably from the action of other myotropic antispasmodics that can cause prolonged hypotension of the smooth muscles of the gastrointestinal tract. Thus, mebeverin

can be considered the basis of pathogenetic therapy to normalize the work of the biliary tract and the composition of bile, to which other drugs can be added as needed.

Hepatoprotectors are widely used-ursodeoxycholic acid, which reduces the synthesis and secretion of cholesterol in the liver (ursosan, solutrate, urdoxa). The use of ursodeoxycholic acid (UDCA) preparations in biliary dyskinesia is justified by its ability to reduce the lithogenicity of bile, as well as to have an anti-inflammatory effect on the epithelium and muscle layer of the biliary tract (to reduce the activity of cyclooxygenase 2 and peroxidation), which indirectly contributes to the normalization of impaired motility and secretion. There are theoretical prerequisites for the assertion that UDCA restores the sensitivity of biliary tract receptors to cholecystokinin.

In severe cholelithiasis, cholecystectomy is necessary — an operation to remove the gallbladder.Most often it is carried out by laparoscopic method.

Conclusion and conclusions: based on the above, it should be said that cholelithiasis is a rapidly spreading disease in the world, which is caused by unhealthy diet and lack of education of the population.All of these drugs are the most beneficial effects in the treatment of a person.

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УДК 616

Vasilyeva A.A., Naumova D.V.

PROBLEMS OF MODERN CARDIOLOGY. DISEASES OF THE CARDIOVASCULAR SYSTEM. STRUCTURE AND PREVALENCE, PREVENTION

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Cardiovascular disease is an important public health problem worldwide due to its high prevalence and high mortality rate. A third of all deaths in the world occur from diseases of the cardiovascular system (85% of them are heart attacks or strokes), more than 75% occur in countries with low and medium levels of economic development. In Russia, the incidence of the cardiovascular system is more than 19% of all diseases, mortality is 50%. Experts of the World Health Organization predict an increase in the number of cases and deaths from cardiovascular diseases. Diseases of the vessels and heart are more susceptible to older people, but over the past decades, these diseases have begun to affect younger people.

Thus, coronary heart disease is often diagnosed for the first time in thirty-year-olds, and from the age of forty it becomes the cause of premature death. Statistics show that men are more susceptible to cardiovascular diseases, the risk is 1.5 times higher than that of women.

Key words: cardiovascular disease, heart, heart disease, patient survey, types of heart disease, prevention against heart disease, treatment.

Васильева А.А., Наумова Д.В.

ПРОБЛЕМЫ СОВРЕМЕННОЙ КАРДИОЛОГИИ. ЗАБОЛЕВАНИЯ СЕРДЕЧНО-СОСУДИСТОЙ СИСТЕМЫ. СТРУКТУРА И РАСПРОСТРАНЕННОСТЬ, ПРОФИЛАКТИКА

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Сердечно-сосудистые заболевания являются важной проблемой общественного здравоохранения во всем мире из-за их высокой распространенности и высокой смертности. Треть всех смертей в мире происходит от болезней сердечно-сосудистой системы (из них 85% составляют инфаркты или инсульты), более 75% приходится на страны с низким и средним уровнем экономического развития. В России заболеваемость сердечно-сосудистой системы составляет более 19% всех заболеваний, смертность составляет 50%. Эксперты Всемирной организации здравоохранения прогнозируют рост числа заболевших и смертей от сердечно-сосудистых заболеваний. Заболеваниям сосудов и сердца больше подвержены люди старшего возраста, но в последние десятилетия эти заболевания стали поражать и более молодых людей.

Так, ишемическая болезнь сердца часто впервые диагностируется у тридцатилетних, а с сорока лет становится причиной преждевременной смерти. Статистика показывает, что мужчины более подвержены сердечно-сосудистым заболеваниям, риск в 1,5 раза выше, чем у женщин.

Ключевые слова: сердечно-сосудистые заболевания, сердце, болезни сердца, обследование пациентов, виды болезней сердца, профилактика болезней сердца, лечение.

Hypothesis: we think that it is possible to reduce the risk of CVD if you undergo psychological training, limit yourself to the use of energy or alcoholic drinks, give the body physical activity and eat right.

Tasks

1. Determine the causes of CVD;

2. To study the literature about diseases of the cardiovascular system, as well as ways to prevent them;

3. Conduct a survey among people of different ages;

4. Analyze the results obtained;

5. Determine the number of people at risk of CVD;

6. Formulate conclusions based on the results of the work.

The purpose of the study: to identify categories of people prone to diseases of the cardiovascular system.

Materials and methods of research

The main method of research in our work is a survey. In the process of work, we asked questions to patients of different ages. 73 people agreed to take part in our survey. We asked about their lifestyle, bad habits, treatment or the presence of diseases in the family.

After the survey, we correlated the data obtained with the degree of threat to human life. People of different ages took part in the survey, and depending on the age category, factors can affect their health in different ways.

Results and discussion

The risk of morbidity in persons under 20 years of age: 75% - moderate, 15% - significant, 10% - absent. There is no maximum risk.

The risk of morbidity in persons aged 20-30 years: 68% - moderate, 32% - significant. The maximum risk is not observed.

The risk of morbidity in persons aged 31-40 years: 70% - moderate, 30% - significant. The maximum risk is not observed.

The risk of morbidity in persons aged 41-50 years: 15% - moderate, 73% - significant. The maximum risk is 12%.

The risk of morbidity in persons aged 51-60 years: 11% - moderate, 73% - significant. The maximum risk is 16%.

The risk of morbidity in persons 60 years of age and older: 11% - moderate, 65% - significant. The maximum risk is 17%. 7% have no risk.

People who drink alcohol, are addicted to nicotine or have relatives who have or have had problems with the heart and blood vessels are mainly at risk of cardiovascular disease. Stress can affect a person's health.

Fortunately, most people exercise and watch their diet. Such people are less susceptible to diseases of the cardiovascular system. But many experience chest pain, and people with high blood pressure are also at increased risk.

Surprisingly, people over 60 have the best health, they have no bad habits, proper nutrition, they do not eat starchy foods.

Conclusion and conclusions: Thus, one of the most common diseases of the cardiovascular system are coronary heart disease, myocardial infarction and hypertension. By following a healthy lifestyle, each of us can prevent these diseases without drugs.

There is a whole range of measures to prevent diseases of the cardiovascular system. It includes the absence of bad habits, proper nutrition, avoidance of stressful situations and physical activity.

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PYELONEPHRITIS

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This article highlights such concepts as etiology, pathogenesis, diagnosis, prevention, treatment and some classifications peculiar to pyelonephritis. Several examples from statistics and data from a survey conducted with patients will also be highlighted.

Key words: acute pyelonephritis, inflammatory process, kidneys, calyx-pelvic system.

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ПИЕЛОНЕФРИТ

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В данной статье освещены такие понятия, как этиология, патогенез, диагностика, профилактика, лечение и некоторые классификации свойственные пиелонефриту. Так же будет выделено несколько примеров из статистики и данных из проведенного опроса с больными.

Ключевые слова: острый пиелонефрит, воспалительный процесс, почки, чашечно-лоханочная система.

Relevance

It is believed that one of the most common infectious diseases of the urinary system is pyelonephritis. According to statistics, pyelonephritis accounts for about 15% of all kidney diseases in total and is the most common cause of hospitalization of patients with this disease. This pathology is of an actual nature, since absolutely all age groups are subject to it.

To date, it can be concluded that fewer and fewer people are engaged in physical labor. In most cases, physical inactivity is the root of many chronic diseases. With a sedentary lifestyle, urine in the human body stagnates and, thus, some conditions are created for the occurrence of diseases of the urinary system. Vivid examples are the deterioration of the blood supply to the kidneys, the weakening of the muscles, as well as the thinning of the fat capsule, which in turn is responsible for supporting the organ. Since the main function of the kidneys is the excretion of metabolic products from the body, the decrease in function is accompanied by the accumulation of toxic substances in the blood.

Pyelonephritis is a nonspecific infectious and inflammatory process characterized by simultaneous or sequential damage to the calyx—pelvic system and the parenchyma (main tissue) of the kidney. Pyelonephritis is based on an infectious lesion of the pelvis and cups of the kidney, as well as its parenchyma. It is almost always caused by pathogenic bacteria that have entered the

body from the outside. Moreover, very often pyelonephritis masks its symptoms under other diseases, which significantly complicates treatment, which is already quite difficult.

Goals and objectives. To consider and analyze the main forms of pyelonephritis, their differences, as well as using statistics and research to identify the main causes of this disease, methods of diagnosis, treatment and preventive measures. To conduct an analysis among the complications of this kidney disease.

Classification of pyelonephritis

This disease has quite a lot of different classifications, because there is no single classification of pyelonephritis. In clinical practice, it is customary to divide pyelonephritis into acute and chronic, primary and secondary (i.e. uncomplicated or complicated) by the nature of the course. Special attention in medicine is paid to acute pyelonephritis.

Acute pyelonephritis is an inflammatory kidney disease of bacterial cause with a predominant lesion of the pelvis, calyx and interstitial tissue of the kidney parenchyma. Acute pyelonephritis often develops for the first time during pregnancy. This is facilitated by hormonal changes, mechanical obstacles (enlarged uterus) for urine outflow and physiological immunosuppression.

Chronic pyelonephritis is a long—term inflammatory process in the kidneys, which leads to the gradual destruction of tissues and the loss of its function by the organ. According to statistics, women suffer from chronic pyelonephritis 5-6 times more often than men, which is due to the peculiarities of the anatomical structure of the urethra in women, contributing to easier penetration of infection into the bladder ascending. For the same reasons, asymptomatic bacteriuria is observed in girls 10 times more often than in boys.

Primary or non–obstructive pyelonephritis is a microbial-inflammatory process in the interstitial and cup-pelvic system of the kidney, developing without organic or functional disorders of urodynamics.

Secondary or otherwise obstructive pyelonephritis is an infectious and inflammatory process in the interstitial and cup-pelvic system of the kidney, developing against the background of organic or functional disorders of urodynamics.

Pyelonephritis is a disease of bacterial nature without a specific pathogen. Etiological factors include both bacteria and viruses. Among the bacteria, the leading place in the occurrence of pyelonephritis is occupied by E. coli (Escherichia coli), then enterococci, staphylococci and Pseudomonas aeruginosa can be attributed here. Infection can be introduced in completely different ways. For example, through the bladder and urethra, such a path is called urinogenic. Sometimes

the disease may appear due to some inflammatory process (appendicitis), then this pathway will be called hematogenic.

Microbes with blood flow enter the vascular loops of the renal glomeruli, where they cause inflammatory and degenerative changes in the endothelium and penetrate into the lumen of the tubules. The occurrence of the inflammatory process contributes to the obstruction of the normal outflow of urine through the urinary system, which leads to stagnation of urine in the cup-pelvic system and infection.

Clinical picture

Pyelonephritis usually develops acutely and may have the following sudden symptoms. After conducting a survey with patients, the following conclusions were made: almost every second patient complained about pain in the lumbar region on the affected side, which was accompanied by chills and sometimes fever. A clear symptom and a fairly frequent complaint was a change in the color of urine. Additional complaints were attributed to nausea, decreased appetite and general weakness.

What kind of diagnosis is indicated for this urological disease? Nowadays, there are a number of diagnostic methods for detecting various kidney pathologies and making the correct diagnosis. First of all, the patient is recommended to take a general urine test, according to which it will be possible to detect the presence of an inflammatory process. Pyelonephritis is characterized by an increase in the number of white blood cells, as well as the presence of bacteria (normally bacteria in the urine should not be detected). The presence of protein and glucose is also likely. However, a general urinalysis cannot confirm the diagnosis of pyelonephritis, so similar results can be found in other diseases. In addition to laboratory testing, they seek help from radiation diagnostics and prescribe ultrasound and CT of the kidneys. The most important recommendations for the prevention of pyelonephritis are: 1) sufficient fluid intake, 2) avoiding hypothermia, 3) do not wear tight and tight clothes.

Treatment. It should be noted that the correct diet is quite important in the treatment of pyelonephritis. There are several ways to treat this disease. First of all, it is necessary to mention medication. To normalize the outflow of urine, antibacterial therapy is recommended together with the use of uroseptics. In addition to drug therapies, surgical intervention is also resorted to. The operation is indicated if a purulent formation needs to be removed, or if the kidney is significantly damaged and is a source of infection.

If timely treatment is not carried out, complications such as kidney failure, sepsis, kidney abscess, etc. may occur.

Conclusion

In concluding the topic, we can come to the conclusion that at the beginning of the disease it is very difficult to predict exactly how the disease will develop. If the symptoms mentioned earlier are detected, it is recommended to contact specialists immediately.

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УДК 616.5

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COMBINATION OF ACNE`S APPEARANCE WITH GASTROINTESTINAL CONDITION

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The purpose of writing this article was to identify possible causes of acne, namely, to demonstrate the relationship between the condition of the skin and the gastrointestinal tract. After examining various sources, we were able to find out that most skin diseases are associated with problems in the gastrointestinal tract. Having learned about the main causes of exacerbation of seborrheic dermatitis, it was possible to identify the main methods of treatment of various dermatoses.

Key words: dermatosis, acne, GIT, pathological gastrointestinal changes, treatment.

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ВЗАИМОСВЯЗЬ ПОЯВЛЕНИЯ И ОБОСТРЕНИЯ АКНЕ С СОСТОЯНИЕМ ЖКТ

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Целью написания данной статьи было выявление возможных причин появления акне, а именно демонстрирование связи между состоянием кожи и ЖКТ. Обследовав разные источники, нам удалось выяснить, что большинство заболеваний кожи связаны с проблемами в желудочно-кишечном тракте. Узнав об основных причинах обострения себорейного дерматита удалось выявить основные методы лечения различных дерматозов.

Ключевые слова: дерматоз, акне, ЖКТ, патологические изменения желудочного-кишечного тракта, лечение.

The people`s skin reflects most of physiological and pathological processes, which occur in different organsand body system. One of the most extended problems with skin is an «Acne».

Acne - is a chronic recurrent disease, connected with sebum`s excessive output and occlusion of sebaceous glands with following inflammation.

In most case acne is associated with teenagers, as it is the period of hormonal changes in the whole organism. In this period increases the sebum`s output accompanied with pore’s occlusion and formation inflammations. Most of teenagers manage with this problem fast enough. But some people suffer from dermatosis even at an older age.

If aged 16 teenagers hope to acne`s self-acting disappearance in soon, aged 18 people won`t understand how to treat the dermatosis. People waste a great number of money to cosmetology, buying expensive care products. It is good if all these affairs yield some results. But often it is not

enough for acne`s efficient treatment. The cause of seborrheic dermatitis`s appearance and exacerbation may be deeper.

Different kinds of causes can influence to acne`s appearance. There are hereditary factor, environmental factors, improper care, unhealthy and unbalanced diet, hormonal disbalance, distribution of regime, constant stress, lack of sleeping. Combination some of these factors may be one of the most important reasons of seborrheic dermatitis`s appearance. But for all that, people suffer from dermatosis have problems with gastrointestinal tract which plays essential role in nutrient absorption, in metabolic product`s excretion and body balance control.

Purpose

The purpose of writing this article was to identify possible causes of acne, namely, to demonstrate the relationship between the condition of the skin and the gastrointestinal tract.

Materials and methods: materials and methods: medical journals, Internet resources, experience of doctors and patients; observation and fact-finding, analysis, and synthesis

Results and discussion

Acne vulgaris occur more often among different kinds of seborrheic dermatosis. About 35 per cent of boys and 23 per cent of girls suffer from this disease. Only aged 24 the index descends 10 per cent.

In 1972, for instance, Emerson and Straus, investigated mor than 1000 students aged 15-18, had revealed acne among 80 per cent of them, including boys and girl.

If to take epidemiological explorations, high frequency of combination between gastrointestinal condition and chronic dermatoses is shown and mechanism of formation of skin lesions in gastrointestinal pathology are studied in most of them.

Dermatologists and cosmetologists are faced with external manifestations of internal organ`s disease. In other words, chronic cutaneous diseases can be attributed to gastrointestinal disease`s internal cause.

As shown in one of explorations with 13000 teenager`s participation, patients with acne more frequently suffer from functional illnesses of GLT maintaining with astriction, halitosis and gastrointestinal reflux. Other authors reveled, that patients with seborrheic dermatosis have gut flora`s disturbance with small bowel bacterial overgrowth syndrome`s development. To severity acne can influence gut permeability disturbance.

As authors have shown in their explorations, patients with acne more often have lipopolysaccharide endotoxin(Escherichia coli) in their blood. Others reveled hyperreactivity to

lipopolysaccharide endotoxin. Increasing the concentration of circulating endotoxins as affected intestinal microorganisms in the blood points to high gut permeability in some people with acne.

In the articles, concerning to this subject, is also pointed possibility of regulation gut flora in the patients with acne. In some explorations is demonstrated interrelation of nutritional habit with acne manifestation and recurrence rate. So, the high concentration of fats and carbohydrates leads to descent Bifidobacterium, growth gut permeability and lipopolysaccharide toxins transit through intestinal barrier. It provides activation of oxidative stress and moderate system inflammatory response. It was established the connection between acne and hyperglycemic carbohydrates, milk products high consumption. Consumption of a large amounts of red meat, milk products, refine corn and sugar leads to acne`s development and exacerbation, that can be result both direct influence to inflammatory process inside skin and indirect in fluence through intestinal microcenosis changes. Probiotic use decreases the risk of endotoxin`s entry to blood circulation and immune system reactivity to them, as a result decrease the system inflammation`s severity. Gut flora`s disbalance causes the immune reactivity disturbance of organism, metabolism of nutrients and vitamins and take part in pathogenic mechanism of acne development.

Conclusion

To sum up, to treat the acne not enough visit the cosmetology and start to use expensive care products. So, we can remove only external, temporary causes. But for full treatment of acne, at first, we should understand the original problem, because it can be deeper, than we think. Experienced dermatologists and cosmetologists refer patients to gastroenterologist. They understand, that to skin can influence GLT condition. If intestines has some inflammation processes, such as gastritis, often astrictions, it can be one of the first cause, without any doubt. So, the sooner we remove the underlining cause, the faster we can achieve healthy, clean skin.

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SUNSCREEN AS A MEANS OF PROTECTION FROM NEGATIVE IMPACT OF ULTRAVIOLET RAYS

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The article is devoted to the problem of protecting the human body from UV rays using sunscreen. This work attempts to study the types of sunscreens, their features and properties, consider in details some of the active substances included in the composition and give a brief description, as well as decipher generally accepted abbreviations, that play an important role in understanding the functions of sunscreen. The obtained results of the information analysis provide with a brief review on this topic.

Key words: UV radiation, UVA, UVB, sunscreen.

Ясавиева Д.М.

СОЛНЦЕЗАЩИТНЫЙ КРЕМ КАК СРЕДСТВО СПАСЕНИЯ ОТ НЕГАТИВНОГО ВОЗДЕЙСТВИЯ УЛЬТРАФИОЛЕТОВЫХ ЛУЧЕЙ

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Статья посвящена проблеме защиты организма от ультрафиолетовых лучей с помощью солнцезащитного крема. В этой работе предпринята попытка изучить виды солнцезащитных кремов, их особенности и свойства. Рассмотреть более подробно некоторые из активных веществ, входящих в состав, и дать краткую характеристику, а также расшифровать общепринятые абревиатуры, играющие важную роль в понимании функций солнцезащитного крема. Полученные результаты анализа информации дают краткий обзор данной темы.

Ключевые слова: ультрафиолетовое излучение, УФ-А, УФ-В, солнцезащитный крем.

Today one of the factors accelerating the development of photocarcinogenesis and photoaging is the sun, which radiates ultraviolet rays. Sunglasses, clothing, hats do not fully protect our body against aggressive effects of solar radiation.

That's why there are sunscreens. They contain certain substances, that create a barrier, that prevents the penetration of ultraviolet light through the skin.

The purpose of the study

We set ourselves the task of studying the types and composition of sunscreens and determine which active substances should be present to ensure maximum protection of the human body.

Results and discussions

The way the sun will affect the body depends on two factors: the time of day and the time spent in the sun. Short-term exposure to the sun can cause sunburn. The long-term effects of

repeated exposure to the sun can lead to wrinkles, pigment spots and thinning of the skin. All these morphological features are characteristics of photoaging.

Photoaging is a process, during which the skin undergoes changes induced by chronic UV exposure. Internal changes in photoaging include less dermal fibers expression, pigment heterogeneity and increases the mutagenesis of keratinocytes and melanocytes in the skin [1,3]. To prevent all the listed effects there are sunscreens.

Sunscreen is a specialized product, containing UV filters, that selectively absorb or reflect UV rays. However, since atmospheric ozone absorbs the UVC component, ambient sunlight predominantly consists of 90–95% UVA and 5–10% UVB radiation [4,5]. Solar UV radiation penetrates the skin to different depths: the longer wavelength UVA penetrates deeply into the dermis, it's the other way around with the UVB, that is nearly completely absorbed by the epidermis [5]. Therefore, the main function of sunscreen is to protect the skin from ultraviolet radiation of A and B types.

Sunscreens are divided into 2 types: inorganic - containing physical filters and organic - containing chemical filters. The physical or mineral filters include zinc oxide and titanium dioxide. They are mainly used in the form of nanoparticles, what allows them to be added to a cream in large quantities.

Zinc oxide absorbs and blocks all types of UVB, UVA and its subtypes. Zinc also has anti-inflammatory effects (dries and reduces inflammation) [5]. Titanium dioxide absorbs and blocks UVB, but does not provide full protection from the entire spectrum of UVA rays. This oxide may clog pores. Because of the UV reflection of various types, they are used in combination.

Physical filters have both positive and negative qualities. The positive ones include the ability not to penetrate into deep layers of the skin and not to interact with its elements, which provides an anti-allergic reaction. Mineral filters act immediately after application, have photostability (the ability of the filter ultrastructure is not destroyed by the absorption of ultraviolet radiation). Negative qualities include the ability to "whiten" the skin, instability under various physical factors (high temperature, frequent touching of the face, etc.) and the release of free radicals, that are harmful to human cells [5]. Physical filters are the best choice for sensitive, reactive skin.

Chemical filters are organic complex molecules, which can contain up to four benzene rings. During the existence of sunscreens, chemical filters have changed several generations. Now the new generation filters are safe for the skin, photostable and with their use there is a low probability of

allergies. In the past filters had poor photostability, some of them were photocarcinogens and caused allergic reactions.

New generation filters are gaining popularity - Tinosorb S and M. Tinosorb S is a filter of a wide range of protection (protects from UVA and UVB rays), is very photostable, helps to stabilize other filters, minimally penetrates the skin, is waterproof [6]. Tinosorb M filter absorbs and partially reflects ultraviolet rays of A and B types, it's poorly soluble in water, sufficiently photostable, helps to stabilize other filters (octinoxate).

Chemical filters, as well as the physical ones, have positive and negative qualities. Cream with such filters are more convenient to wear and more easily distributed over the skin, when applied, they do not leave white marks, compared to the physical ones. The disadvantages include some of them not being photostable, so are used in a certain combination. Also, these filters begin to act only 20-30 minutes after application.

An important role in understanding the concept of sun protection is played by the generally accepted abbreviations on the cream packaging. The main ones are SPF and PA.SPF - sun protection factor. It determines the level of protection from sunburn, which is provided only by UVB rays. SPF determines the percentage of the rays that will be absorbed (reflected) or, according to other sources, what part of the rays will reach the skin (for example, SPF 50 - 1/50 of the radiation will reach the skin or 50 percent of the radiation will be blocked). PA (grade of protection from UVA) - the grade of protection from ultraviolet radiation, indicated by pluses (from one to four). The more pluses, the better the protection [5].

Conclusions

Thus, sunscreen containing only organic or inorganic components will not provide complete protection and comfort to human skin. Therefore, the best option for application will be a cream that has in its composition chemical and physical filters in equal proportion. They will compensate for each other's shortcomings and enhance their protective properties.

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BLOOD GROUPS

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For clinical practice, the isolation of erythrocyte antigens is extremely important - the determination of the blood group and the Rh factor. A person's blood group is determined by the presence of antigens on the surface of an erythrocyte and is an individual sign.

Keywords: blood groups, blood type distribution, classification of diseases by blood types

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ГРУППЫ КРОВИ

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Для клинической практики крайне важно выделение эритроцитарных антигенов - определение группы крови и резус-фактора. Группа крови человека определяется наличием антигенов на поверхности эритроцита и является индивидуальным признаком.

Ключевые слова: группы крови, распределение по группам крови, классификация болезней по группам крови.

“Ah, queen... questions of blood are the most difficult questions in the world!”

M.A. Bulgakov "The Master and Margarita"

Blood groups are genetically inherited traits that do not change during life in natural conditions. A blood group is a certain combination of surface antigens of erythrocytes (agglutinogens) of the ABO system.

For clinical practice, the isolation of erythrocyte antigens is extremely important - the determination of the blood group and the Rh factor. A person's blood group is determined by the presence of antigens on the surface of an erythrocyte and is an individual sign.

Research part

From a clinical point of view, the most important of these are the ABO system and the Rhesus system. The main system of blood compatibility.

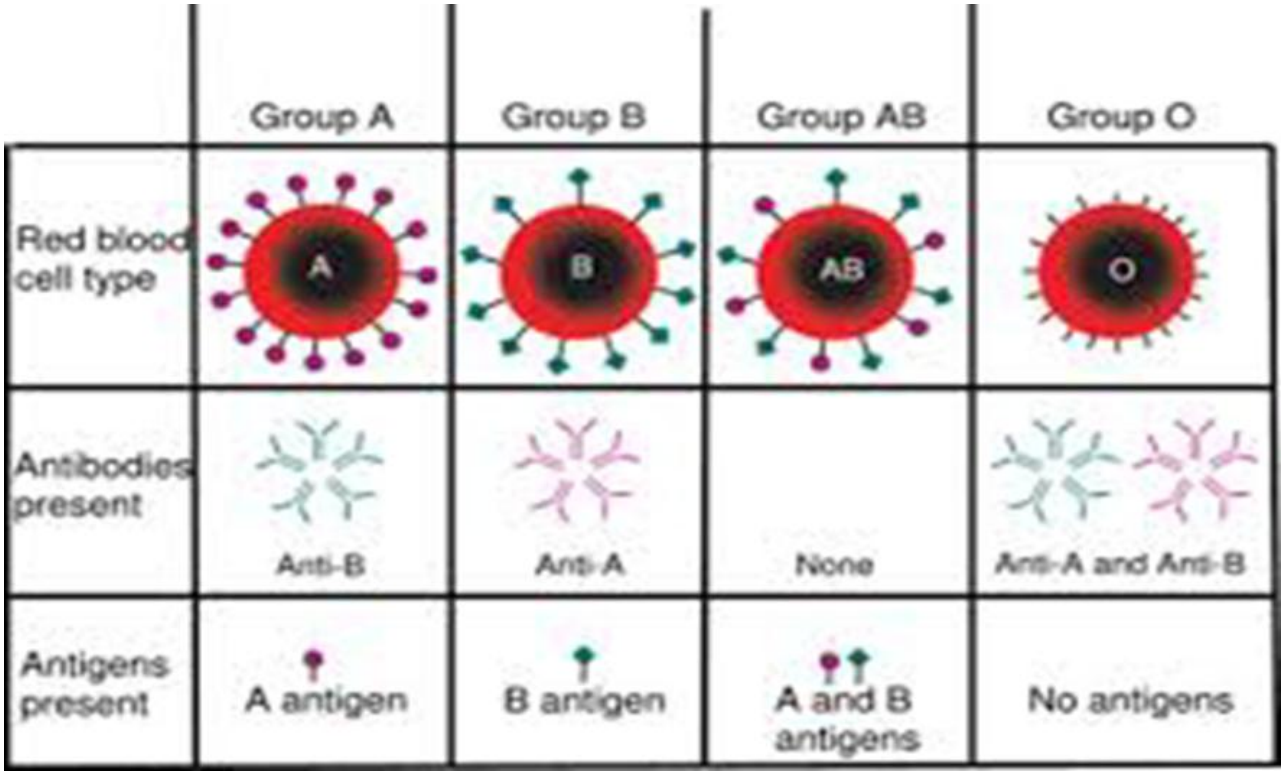
The AB0 blood group system consists of two groups of erythrocyte agglutinogens (A and B) and two corresponding antibodies - plasma agglutinins alpha (anti-A) and beta (anti-B). Various combinations of antigens and antibodies form 4 blood types:

• Group 0 (I) - group agglutinogens are absent on erythrocytes, agglutinins alpha and beta are present in plasma.

• Group A(II) - erythrocytes contain only agglutinogen A, agglutinin beta is present in plasma;

• Group B(III) - erythrocytes contain only agglutinogen B, plasma contains agglutinin alpha;

• Group AB (IV) - antigens A and B are present on erythrocytes, plasma does not contain agglutinins.



Rh blood type

The Rh antigen system is shown by 6 antigens that are inherited and do not change throughout life. After AB0 antigens, the system of Rh antigens has the highest degree in clinical practice. Rh antigens require the induction of immune antibodies. The most active in this regard is the D antigen, which is found under the term "Rh factor". The presence or absence of the D antigen in all individuals determines Rh-positive and Rh-negative.

Donors whose erythrocytes do not contain the D antigen, but contain one of the C or E antigens, are considered Rh-positive.

Due to the complex structure of antigens, the Rh system can be associated with the determination of Rh belonging to human blood.

BLOOD TYPE DISTRIBUTION

Physical anthropology claims that for most of human history, only the first blood type occurs. At the same time, it was shown that the gene of the first blood type (0) is transmitted during infections caused by the excitability of infection (beginning, for example, from the 50th millennium

BC) and formed the basis for identifying racial blood groups. The current average population of the first blood type (0) is presented in

Table. 1

%	Countries and peoples
100	Indians of South and Central America
91	Eskimos of Greenland
65	Eskimos
54,3	Australia: Australians
47	Netherlands: Dutch
46	Canada
45,5	Hong Kong, China: Chinese people
45	USA
45	Belgium
43,5	UK: English
44	Arabs
42	France
41	Denmark
40	Dunkers (USA, emigrants from Germany in the early 18th century)
38	Sweden
37	Poland
34	Russia: Russians
31	Japan: Japanese
31	Finland
30,2	Bengal: Indians
29,9	Hungary: Hungarians
27,5	South Korea

Second blood group. D'Adamo P., Whitney K. argue that "the first carriers of the second blood type appeared among Caucasians." nationalities in the period between 25 thousand and 15 thousand BC. in Western Asia or the Middle East."

Table 2

%	Countries and peoples
42	UK
80	Indians of Southern Canada and Montana: Blood and Blackfoot Tribes
60	Dunkers (USA, emigrants from Germany in the early 18th century)
45,2	Hungary: Hungarians
44	France
44	Denmark
44	Finland
44	Sweden
42,1	Netherlands: Dutch
42	Canada
40,3	Australia: Australians
40	USA
40	Belgium
38	Poland
36,7	Japan: Japanese
36	Russia: Russians
34,5	South Korea
33	Arabs
30	Eskimos
22,6	China: Chinese
20	Bengal: Indians
9	Eskimos of Greenlans
0	Indians of South and Central America

Fourth blood type

Some scientists argue that the fourth blood type (AB) was formed last. Unlike other blood types, the fourth blood type appeared as a result of mixing the Caucasoid population with the second blood group (A) and the Mongols with the third group (B).

Classification of diseases by blood groups

The first blood group: gastric ulcer, duodenall ulcer, gastritis, severe forms of diseases of the gastrointestinal tract, in young children often develop purulent-septic infections, increased susceptibility to all infectious diseases.

The second group: rheumatic diseases, diabetes mellitus, coronary heart disease, bronchial asthma, allergies, leukemia, cholecystitis, cholelithiasis.

The third group: pneumonia, the development of infections after surgery, in women - purulent mastitis, sepsis after childbirth, sciatica, osteochondrosis, joint diseases.

Fourth group: SARS, influenza, tonsillitis, sinusitis, heart defects.

Conclusion

Using the blood of a healthy person to treat a sick person is the highest achievement of medical science. Many centuries passed before this concept became a reality and won universal recognition of world medicine. Isolation by group affiliation is widely used in clinical practice for transfusion of blood and its components, in gynecology and obstetrics in the planning and management of pregnancy.

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ACUTE GASTROENTERITIS: GENERAL INFORMATION, SYMPTOMS, TREATMENT

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Acute gastroenteritis is an infectious disease, usually of viral etiology, accompanied by the development of frequent liquid stool and the possible presence of vomiting, fever. Currently, a variety of different regimens and approaches to treatment of acute gastroenteritis are used. This review presents the basic information about the disease, its clinical profile and treatment methods.

Key words: gastroenteritis, diarrhea, treatment, diagnosis, analysis.

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ОСТРЫЙ ГАСТРОЭНТЕРИТ: ОБЩАЯ ИНФОРМАЦИЯ, СИМПТОМЫ, ЛЕЧЕНИЕ

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Острый гастроэнтерит — это инфекционное заболевание, как правило, вирусной этиологии, сопровождающееся развитием частого жидкого, водянистого стула и возможным наличием рвоты, лихорадки. В настоящее время используется многообразие различных схем и подходов к терапии острого гастроэнтерита. В данном обзоре представлены основная информация о данном заболевании, его клиническая картина и способы лечения.

Ключевые слова: гастроэнтерит, диарея, лечение, диагностика, анализ.

Relevance: Diarrhea continues to be a leading cause of death in both adults and children. According to UNICEF, nearly two billion cases of diarrheal disease are reported worldwide every year. Diarrhea kills 1.9 million children under the age of five, accounting for 18 per cent of all under-five mortality. Gastroenteritis is one of the most common causes of diarrhea in both children and adults. The definition of «acute gastroenteritis» means the emergence of liquid diarrhea more than 3 times a day, which can be accompanied by vomiting and fever. One of the main causes of the development of acute gastroenteritis is both viral agents, in particular rota and noroviruses, and bacterial agents. Acute intestinal infections of viral etiology in children under 17 account for 83 per cent. It follows from the above that acute gastroenteritis remains an urgent problem of modern medicine, and every doctor should have an idea of the correctness of the study and treatment of this condition.

Objective of the study is to determine the pathogenesis of the disease and the main methods of treatment thereof.

Materials and methods. Such research methods as: general scientific, comparative, descriptive were used in writing this work. The main materials for the study were: statistics, data from books and articles.

Results and discussion. This article discusses such infectious disease as acute gastroenteritis, as well as the main symptoms of the disease and treatment methods.

Acute gastroenteritis is the presence of diarrhea and/or an increase in the frequency of defecation (more than 3 episodes per 24 h) combined with fever and vomiting or without. Changing the consistency of the stool is a clearer indicator of diarrhea than the frequency of the stool. Usually acute diarrhea lasts less than 7 days, but more often no more than 14 days.

Disease epidemiology. The source of the causative agent is a sick person and the virus carrier; the mechanism of transmission of the causative agent is fecal-oral, the transmission path is alimentary. Children under 5 years old and people over 55 years old are more susceptible. Rotovirus is the most common causative agent in children. In countries with high rates of vaccination against rotoviruses, noroviruses have become predominant in their etiological structure.

Diagnosis of acute gastroenteritis occurs for the following main symptoms. The disease begins to become acute, with vomiting and nausea. Possible subfebrile and febrile temperature, abdominal pain, diarrhea (up to 5 times). Secondary symptoms usually include weakness, headache, loss of appetite, apathy.

Table 1

Bacterial and viral diarrhea clinic

Bacterial diarrhea	**Viral diarrhea**
High temperature (above 40°C)	Watery diarrhea
Blood in feces	Frequent abundant diarrhea
Neurological Symptoms	Vomiting
Abdominal pain	Catarrhal symptoms

Diagnostics.

The following laboratory tests are used to diagnose acute gastroenteritis:

1. Full blood count
2. Biochemical blood test, namely potassium, sodium, urea, creatinine
3. Common urine test
4. Bacterial culture test (rectal swab)

Most bacteriological culture tests can result in the detection of infectious diseases, as shown in table 2 (data for pre- and post-exposure periods).

Table 2

Most common causative agents of acute gastroenteritis

pathogens of infectious diseases	Percentage per 100,000 population (before COVID-19; after COVID-19)
Shigella sonnei	10%; 5%
Salmonella enterica	7%; 3%
Staphylococcus aureus	10%; 8%

Key recommendations for drug treatment include rehydration therapy and symptomatic treatment. The essence of this treatment is to produce a potassium-sodium balance replacement.

Conclusions:

1. Acute gastroenteritis is a dangerous disease (especially for children)

2. Oral rehydration. Oral rehydration is the basis of therapy for all patients with acute gastroenteritis.

3. It is advisable to use drugs to relieve and eliminate the symptoms.

4. Prevention of this disease includes elementary hygienic requirements (washing hands, washing vegetables and fruits, and selecting good food products), timely vaccination.

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СОКРАЩЕНИЯ В АНГЛИЙСКОЙ МЕДИЦИНСКОЙ ЛИТЕРАТУРЕ, ОСОБЕННОСТИ ИХ НАПИСАНИЯ И ПРОИЗНОШЕНИЯ

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В этой статье мы рассмотрим различные сокращения в медицинской литературе, как на английском языке, так и на латыни, а также различную их форму.

Ключевые слова: сокращенные названия медицинских терминов, сокращения, английские медицинские термины, английский язык.

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ABBREVIATIONS IN ENGLISH MEDICAL LITERATURE, FEATURES OF THEIR SPELLING AND PRONUNCIATION

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In this article, we will consider various abbreviations in the medical literature, in both English and Latin, as well as their various forms.

Key words: abbreviated names of medical terms, abbreviations, English medical terms, English.

В качестве материала для исследования были использованы тексты медицинского содержания, в том числе статьи, брошюры, инструкции и рецепты по применению лекарственных препаратов, словари медицинской терминологии. Изучение сокращений на занятиях как никогда актуально. Эта статья может быть интересна как специалистам по устному и письменному переводу, в частности студентам медицинских вузов, изучающих английский язык; так и врачам, которые изучают английский.

В наши дни использование сокращений становится модным в нашей жизни. Примеры: VIP, DJ, PC, IQ и др. В различных областях науки эта тенденция имеет особенное значение (математика, музыка, языки). Существует множество словарных словарей, в том числе и специальные. Медицина - не исключение. В медицинской литературе, наряду с английскими сокращениями, часто встречаются заимствования из латинских языков. Латинские, греческие и латиноамериканские сокращения часто используются в рецептурных указаниях (наименования лекарственных форм), а также в инструкции по применению лекарств (табл. 1).

Таблица 1
Сокращение и полное название на латинском, полное название на английском, перевод

in caps., in capsulis	in capsules	в капсулах
pro inject., pro injectionibus	for injection	для инъекции
q.s., quantum satis	how much is necessary	сколько потребуется
spir., spiritus	alcohol	спирт
aq. dest., aqua destillata	distilled water	дистиллированная вода

Существует несколько способов сокращений: аббревиатуры, акронимы, усечения, среди которых преобладает усеченные слова.

Основным способом усечений являются апокопы- усечение концевой части слова: detox – detoxification, doc - doctor, flu - influenza (грипп), specs - spectacles (очки). Подвергается усечению также и середина слова (синкопы): ecotecture – ecological architecture, redox - reduction-oxidaton (окислительно-восстановительный), oncodrug - oncology drug . Однако усечение чаще всего используется для различных видов сленга (разговорный, газетный и т.д.).

Одним из значимых элементов являются сокращения и акронимы, которые наиболее часто используются для научных терминов, наименований организаций и групп. Как правило, аббревиатуры употребляются чаще, чем сами термины и произносятся по буквам: CBC - complete blood count, MRI - magnetic resonance imaging, ECG - electrocardiography, CT - computed tomography, ASD - atrial septal defect. Когда аббревиация встречается только на письме cgm – centigram, она читается как полное слово.

Акронимы, в отличие от аббревиатур, произносятся как полные слова:

MAF - macrophage activation factor, PET - positron emission tomography, NSAID - non-steroid anti-inflammatory drug, COVID - coronavirus infection disease.

Акронимы обычно имеют свою определенную сферу использования. ROM – read only memory употребляются в сфере компьютерной техники; TOEFL - test of English as a foregn language - используется в сфере лингвистики, ASTRO - American Society for Therapeutic Radiology and Oncology – в медицине.

Подвергаться сокращению могут любые части речи:

1) Существительные (табл. 2).

Таблица 2

Сокращение, полное название на английском, перевод

cy	cycle	цикл
lim	limit	предел
eq	equipment	оборудование

2) Прилагательные (табл. 3).

Таблица 3

Сокращение, полное название на английском, перевод

asym	asymmetric	асимметричный
crit	critical	критический
flex	flexible	гибкий
leth	lethal	летальный
at	airtight	герметичный

3) Причастия: (табл. 4).

Таблица 4

Сокращение, полное название на английском, перевод

amb	ambient	окружающий
contd	contained	содержащийся
stnd	stained	окрашенный
vis	visible	видимый

4) Глаголы: (табл. 5).

Таблица 5

Сокращение, полное название на английском, перевод

det	determine	определять

5) Союзы: (табл. 6).

Таблица 6

Сокращение, полное название на английском, перевод

N	and	и
i.e.	id est	то есть

Очень часто в литературе встречаются сокращения-омонимы: (табл. 7).

Таблица 7

Сокращение, полное название на английском, перевод

rec	1) recurrence 2) record 3) recovery	1) рецидив 2) запись, учет 3) восстановление
reg	1) regeneration 2) registration	1) восстановление 2) регистрация
res	1) research 2) residue 3) resistance	1) исследование, анализ 2) осадок, остаток 3) устойчивость, стойкость
resp	1) response 2) respiratory	1) ответная реакция 2) дыхательный
st	1) sterilization 2) stitch	1) стерилизация 2) стежок, шов
Th	1) thorax 2) T helper	1) грудная клетка 2) Т-хелпер

Таким образом, сокращения в английской научной медицинской литературе являются незаменимой и важной частью языка. Проведенное исследование показало, что в английской медицинской литературе используются различные способы сокращений, среди которых преобладает аббревиатура. Для полного понимания сокращений необходимо глубокое знание предмета и заранее знание значения используемых сокращений в тексте.

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СТЕРЕОТИПЫ И ПРЕДРАССУДКИ, СВЯЗАННЫЕ С ПРЕДСТАВЛЕНИЕМ ОБРАЗА РОССИЙСКОЙ И ЗАРУБЕЖНОЙ МЕДИЦИНЫ

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Статья посвящена исследованию стереотипов о медицинской деятельности, сформировавшимся в понимании человека на основе телесериалов.

Ключевые слова: стереотип, образ медицины, зарубежная и отечественная медицина, медицинские сериалы.

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STEREOTYPES AND PREJUDICES ASSOCIATED WITH THE REPRESENTATION OF THE IMAGE OF THE RUSSIAN AND FOREIGN MEDICINE

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The article is devoted to the study of stereotypes about medical activity formed in the understanding of a person based on television series.

Key words: stereotype, image of medicine, foreign and domestic medicine, medical series.

Актуальность темы обусловлена тем, что люди имеют возможность взглянуть на работу врачей, медицинского персонала благодаря сериалам. Медицинские сериалы один из значимых инструментов формирования осведомленности зрителей о медицинских проблемах. Большинство людей не сталкиваются со всеми аспектами медицинской практики в своей повседневной жизни и узнают о ней из средств массовой коммуникации. Зрители могут пережить все, что показано на экране, на субъективном и личном уровне, тем самым заранее формируя свое отношение к болезни, врачам и системе здравоохранения.

Цель исследования

Заключается в сравнении стереотипов о представлении образа медицины на основе отечественного и американского сериала

Материалы и методы

Российский сериал «Интерны» и американский сериал «Клиника», метод сравнительного анализа.

Результаты и обсуждения

Проанализируем стереотипы в сериале "Клиника». Клиника — это комедийно-драматический телесериал, посвященный работе молодых врачей.

Первым признаком, по которому будет проведен сравнительный анализ это срок обучения.

Главный герой “Клиники” Джон Дориан молодой врач, отучившись 3 года pre medical (образовательный курс) и 4 года медицинского колледжа, отправляют в клинику «Sacred Heart». Медицинское образование в Америке самый долгий и тяжелый процесс, так как для начала необходимо окончить бакалавриат (4 года) в области биологии, биохимии, физики и психологии. После этого сдать экзамен MCAT (Medical College Admission Test).

В сериале “Интерны” освещается работа молодых и неопытных специалистов, только окончивших медицинский университет. Для того, чтобы им стать квалифицированными практикующими врачами, требуется не просто диплом врача общей специализации, но также отучиться год в интернатуре.

Второй признак - рабочая форма интернов.

Можно заметить, что все молодые врачи, включая Джона, одеты в одинаковую одежду, а именно темно-синий хирургический костюм. А уже более опытные врачи носят медицинские халаты.

Медицинская форма интернов в русском сериале чаще всего представлена не хирургическим костюмом, а просто белым халатом, надетым поверх обычной повседневной одежды.

Третий не менее важный признак – отношения медицинского персонала между собой. В «Клинике» отношения между новыми врачи хорошие, так как все они новички и становятся друзьями. Благодаря старшей медсестре Карле, которая помогает им адаптироваться, также имеют доверительные отношения. Но с более опытными врачами, такие как Доктор Кокс более непростые взаимоотношения. Он постоянно высмеивает и оскорбляет Джона, но хочет превратить его в первоклассного врача.

В сериале “Интерны” руководитель — заведующий терапевтическим отделением Андрей Евгеньевич Быков — постоянно подшучивает, насмехается над молодыми врачами. Между самими интернами дружеские отношения, также часто шутят друг над другом. Но в любой трудной ситуации они готовы прийти на помощь, если это потребуется.

В любом случае, в отношениях между медицинскими работниками должна соблюдаться субординация, вежливость и взаимовыручка.

Четвертый признак, поддающийся сравнению, — это отношение пациентов к врачам.

В «Клинике» врачи всеми способами пытаются исполнить свой долг, а пациенты в ответ доверят собственное здоровье и жизнь, так как только совместная работа определяет эффективность лечения. Пациенты уважают и доверяют медицинским работникам они знают что хотят им помочь. Но пациенты не всегда выполняют назначения врачей.

В сериале «Интерны» стереотипы, связанные с изображением пациентов, включают непоследовательность, скептицизм, неспособность объяснить свои симптомы, ожидание немедленных результатов или чудес при лечении, невыполнение назначений врача, проявление грубости по отношению к врачам, просьбы перепроверить их работу.

Некоторые пациенты изображаются так, будто считают, что врач им уже должен.

Талица 1

Сведения о сходствах и различиях стереотипов о медицине в сериалах русского и зарубежного производств

Сравнительные признаки	Российский сериал “Интерны”	Зарубежный сериал “Клиника”
Срок обучения	6 лет обучения на врача общей специализации год обучения в интернатуре	3 года pre medical (образовательный курс) 4 года медицинского колледжа 4 года высшей медицинской школы
Одежда и внешний облик	Белый халат, надетый поверх повседневной одежды. Аккуратный внешний вид	Темно-синие хирургические костюмы, белые халаты (для опытных врачей), опрятный чистый внешний вид
Отношения между врачами	Дружеские отношения, на каждом шагу шутят друг над другом. При этом очень отзывчивы в трудной ситуации	В целом имеют доверительные отношения. Но более с опытными врачами, такими как Доктор Кокс не совсем простые взаимоотношения.
Отношение пациентов к врачам и врачей к пациентам	Пациенты редко проявляют скептицизм, грубость по отношению к врачам, ожидают немедленных результатов или чудес при лечении, не всегда выполняют назначения врача. По отношению к пациентам интерны часто проявляют некоторое легкомыслие, невежливость	Пациенты доверяют свое здоровье и жизнь врачам, так как совместная работа определяет эффективность лечения. Врачи, в свою очередь, относятся к своим пациентам позитивно и радушно, пытаются оказать эффективную помощь. Однако в редких случаях можем наблюдать бестактность и некорректность в высказываниях по отношению к пациентам

Заключение и выводы

Исходя из выше представленных данных, можно сделать следующие выводы: Медицинские сериалы, являющиеся популярным жанром телепередач, играют большую роль в формировании стереотипов поведения врачей, взаимоотношения пациента с врачом,

отношения пациента к собственному заболеванию, к лечению и типу образа жизни. Они важнейший инструмент влияния на формирование представления и отношения зрителей к медицине.

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