THE SECOND INTERNATIONAL SCIENTIFIC – PRACTICAL VIRTUAL CONFERENCE ”MODERN MEDICINE: PROBLEMS, PROGNOSES AND SOLUTIONS”

PROGRAM AT A GLANCE

AZERBAİJAN-ESTONIA-KAZAKHSTAN-TURKEY JOINT CONFERENCE

TALLINN 2020

THE SECOND INTERNATIONAL SCIENTIFIC – PRACTICAL VIRTUAL CONFERENCE - MODERN MEDICINE: PROBLEMS, PROGNOSES AND SOLUTIONS

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TABLE OF CONTENTS

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PROGRAM AT A GLANCE

First day	**18 December 2020**
Moderators	Namig Isazade, Aytan Huseynova

Opening ceremony	Aytan Huseynova, Namig Isazade
19.00-20.00	**Raushan Binomovna Issaeva** Director of Higher School of Medicine Al-Farabi Kazakh National University doctor of medical science, professor.
	Tamar Didbaridze Tbilisi State Medical University. Associate Professor.
	Aytakin Hasanova Azerbaijan Medical University. Associate Professor.
	Tamara Abaeva Kyrgyz state medical academy named after I. K. Akhunbaev. Professor. Bishkek. Kyrgyzstan
	Olga Revo
20.00-20-15	**Coffee brake**
20.15-20.45	**Ilker Kiris, MD** MODERN MANAGEMENT OF AESTHETIC VARICOSE VEINS.
20.45-21.00	**Aytakin Hasanova** MULTIPLEX LIGATION-DEPENDENT PROBE AMPLIFICATION (MLPA) AND PRENATAL DIAGNOSIS.
21.00-21.15	**Tamara Abaeva** MORPHOFUNCTIONAL CHARACTERISTICS OF THE THYMUS IN SEVEN OLD RATS UNDER CONDITIONS OF MOUNTAIN HYPOXIA IN KYRGYZSTAN
21.15-21.30	**Tamar Didbaridze** BETA-LACTAMASE GENES CARRIED BY MULTI-DRUG RESISTANT ENTEROBACTERIACEAE.
21.30-21.45	**Gunel Tagiyeva** Dietolog.
21.45-22.00	**Konul Tagiyeva** Cosmetolog.
Second day	**19 December 2020**
19.00-19.30	**Leila Suleimanova** GENETICS OF THE VIRUS SARS-COV-2.
19.30-20.00	**Lala Akhundova, Gulmira Alibayova, Nurmammad Mustafayev, Samira Rustamova, Irada Huseynova** IMPACT OF ANGIOTENSIN-1 CONVERTING ENZYME GENE INSERTION/DELETION (I/D) POLYMORPHISM ON DIABETES MELLITUS SUSCEPTIBILITY AMONG AZERBAIJAN POPULATION.
20.00-20.15	**Lala Huseynova, Qumru Huseynova** R761H M694I, M694V, V726A, R202Q, M680I AND E148Q MEFV GENE (FAMILIAL MEDITERRANEAN FEVER GENE) MUTATIONS IN THE AZERBAIJANİAN PATİENTS.
20.15-20.30	**Ahliman Amiraslanov, Elnur Ibragimov, Sevinj Abdiyeva, Samira Qaraisayeva** SECONDARY INFECTION IN CANCER PATIENTS OF THE MUSCULOSKELETAL SYSTEM
20.30-20.45	**Sevinj Maharramova, Vugar Maharramov** ABOUT THE DYNAMIC DEVELOPMENT OF THE HEALTH AND PHARMACEUTICAL SECTOR IN AZERBAIJAN.

20.45-21.00	**Learta Alili Ademi, Blerim Ademi** ACUTE DISSEMINATED ENCEPHALOMYELITIS IN A 5 YEARS OLD BOY, A CASE REPORT.
21.00-21.15	**Tamar Giorgadze, Sophio Giorgadze** CLINICAL ASPECTS OF PYROPTOSIS.
21.15-21.30	**Nino Pirtskhelani, Nino Kochiashvili, Ketevan Kartvelishvili, Levan Makhaldiani** INHERITED THROMBOPHILIA AND COVID-19

21.30-21.45	**Sain Safarova** ARTIFICIAL INTELLIGENCE ON THE IDENTIFICATION OF DIABETES-RELATED OSTEOMETABOLIC DISORDERS.
21.45-22.00	**Gunel Tagiyeva** Dietolog.

Third day	**20 December 2020**
19.00-19.15	**Nazigul Zhumagazhiyeva, Amir Kappassov, Nazira Dyusekenova** PROBLEM OF MEDICAL STUDENTS WHICH PREVENT FORMING A HEALTHY LIFESTYLE.
19.15-19.30	**Gulmira Zhurabekova, Merey Aliyeva** NEUROIMAGING DATA OF THE STUDY OF THE CHIASMAL-SELLAR REGION STRUCTURES.
19.30-19.45	**Айгуль Базарбаева, Азамат Кубиев, Дария Бекбатырова, Аяулым Нуртлеуова** ДИАГНОСТИЧЕСКИЕ ОСОБЕННОСТИ ЗЛОКАЧЕСТВЕННЫХ ОПУХОЛЕЙ ДЕТЕЙ ПЕРВОГО ГОДА ЖИЗНИ.
19.45-20.00	**Мария Галас, Алия Жайлаубаева, Бахрам Жумадуллаев, Айгуль Тулебаева, Лязат Манжуова, Риза Боранбаева** РЕЗУЛЬТАТЫ ТЕРАПИИ ПАЦИЕНТОВ С ДИАГНОЗОМ «НЕЙРОБЛАСТОМА» СОГЛАСНО ПРОТОКОЛУ NB-2004.
20.00-20.15	**Куаныш Умбетов, Аяулым Нуртилеуова** ОПЫТ ПРОВЕДЕНИЯ ГАПЛОИДЕНТИЧНОЙ ТРАНСПЛАНТАЦИИ ГЕМОПОЭТИЧЕСКИХ СТВОЛОВЫХ КЛЕТОК С ИСПОЛЬЗОВАНИЕМ ТЕХНОЛОГИИ ИМУННОМАГНИТНОЙ СЕПАРАЦИИ ЛИМФОЦИТОВ.
20.15-20.30	**Райхан Майтбасова** НЕСПЕЦИФИЧЕСКИЙ АОРТОАРТЕРИИТ У ДЕТЕЙ: ПРОБЛЕМЫ ПОЗДНЕЙ ДИАГНОСТИКИ И ЛЕЧЕНИЯ.
20.30-20.45	**Анар Туляева, Гульмира Журабекова, Ербол Бекмухамбетов, Ерболат Изтлеуов, Айдана Таутанова** ДВОЙНЫЕ РАЗРЫВЫ НИТЕЙ ДНКА И РАК ЖЕЛУДКА.
20.45-21.00	**Aknur Lesbek, Ainur Omirzak, Akbota Shaymyrzakyzy** THE STRUCTURE OF THE CAUSES OF DEATHS WITH COVID-19 DURING THE PANDEMIC.

21.00-21.15	**Gulmira Zharmakhanova, Victoria Kononetc, Lyazzat Syrlybayeva, Eleonora Nurbaulina, Lyazzat Baikadamova** HYPERPHENYLALANINEMIA: CASE REPORT.
21.15-21.30	**Shynykul Zhanserik** A NOVEL PEPTIDE MODULATOR OF THE HUMAN CHANNEL NAv1.5 FROM LATRODECTUS TREDECIMGUTTATUS SPIDER VENOM.
Closing ceremony	

ABSTRACTS AND THESES

TABLE OF CONTENTS

10

THE SECOND INTERNATIONAL SCIENTIFIC – PRACTICAL VIRTUAL CONFERENCE - MODERN MEDICINE: PROBLEMS, PROGNOSES AND SOLUTIONS

MMPPS
VIRTUAL CONFERENCE: MODERN MEDICINE
ALMATY
KAZAKHSTAN - 2020

THE SECOND INTERNATIONAL SCIENTIFIC – PRACTICAL VIRTUAL CONFERENCE - MODERN MEDICINE: PROBLEMS, PROGNOSES AND SOLUTIONS

ACUTE DISSEMINATED ENCEPHALOMYELITIS IN A 5 YEARS OLD BOY, A CASE REPORT

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ABSTRACT

Acute disseminated encephalomyelitis (ADEM) is a multifocal autoimmune demyelinating disease of the central nervous system usually following a viral infection or vaccination. It is a poly-symptomatic disorder that may be represented with combination of motor, sensory, visual and cognitive symptoms. Sometimes because of to the clinical presentation, the diagnosis is a dilemma, due to which many studies may be done with no confirmed conclusion. In addition, there have always been and will be present debates regarding the diagnosis of ADEM due to different clinical presentations in different cases. Clinically and pathologically ADEM resembles Multiple sclerosis (MS). We report a five years old boy who was admitted with acute onset of symptoms of weakness and pain in the lower limbs, difficulty to stand on his feet and inability of walking. On admission he was conscious, afebrile, hypotonic, and with gait disturbance. During neurological examination verbal and visual contact was established, cranial nerve examination revealed normal findings, muscular strength and tone was normal, tendon reflexes were preserved with a hyperactivity in the lower limbs and positive Babinski sign on both sides, superficial and deep sensibility were preserved and there were no meningeal signs. Laboratory evaluation and diagnostic procedures were performed. MRI of brain showed multiple hyperintense focal lesions in subcortical white matter bilaterally dominating in temporal, frontal and parietal region in T2 weighted images and FLAIR. EEG pattern exhibited spikes of high amplitude in the right side. Lumbar puncture was performed and cerebrospinal fluid (CSF) analysis showed high protein content. According to the characteristics of the electrophoregram there is an immunological activity in the brain that corresponds to an acute inflammatory process. The clinical picture and the MRI scan findings as well as CSF analysis were suggestive of an initial demyelinating event. Treatment was

implemented with high-dose intravenous corticosteroids (Methylprednisolone) He made a dramatic improvement over the next few days and was able to walk well at the end of the first week. Short duration of illness prior to admission, widespread multifocal involvement on MRI brain scan and the response to steroids favor the diagnosis of ADEM. Even though, distinguishing ADEM from MS on a single MRI brain scan is difficult, due to CSF inflammatory profile an early-onset of MS needs to be taken in consideration.

Keywords: acute disseminated encephalomyelitis, white matter, multiple sclerosis, magnetic resonance imaging.

CLINICAL ASPECTS OF PYROPTOSIS

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ABSTRACT

Cell death, survival, proliferation and differentiation represent fundamental processes of life. In recent years, multiple novel cell death modalities have been identified and characterized concerning their corresponding stimuli, molecular mechanisms and morphologies. Nowadays we believe that cell death can be roughly divided into necrosis and programmed cell death, the latter one, including apoptosis, oncosis, autophagy, etc., as well as pyroptosis. There has been increasing interest in pyroptosis as a novel form of pro-inflammatory programmed cell death. The complicated mechanism of pyroptosis and its association with the internal environment have been gradually uncovered in recent years. Given its two major effects, cell dysfunction and proinflammation, pyroptosis is thought to plays crucial roles in the pathogenesis and progression of various diseases. Zhaodi Zheng and Guorong Li reported that some molecules or compounds which block pyroptosis may lead to effective treatments for various inflammatory diseases. Some compounds can act as the promising therapeutic drugs for blockage of pyroptosis in inflammatory disease, and others can induce pyroptosis. The way in which we can get a breakthrough in this area remains an issue of utmost importance and requires earnest handling.

Keywords: Pyroptosi; Caspase; Gasdermin; Disiase;

HYPERPHENYLALANINEMIA: CASE REPORT

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BACKGROUND

Hyperphenylalaninemia (HPA) is a group of autosomal recessive diseases caused by impaired metabolism of the essential amino acid phenylalanine (Phe), which enters the human body with protein food [1]. HFA combines several genetically heterogeneous forms of phenylalanine metabolism disorders similar in clinical features: classical phenylketonuria (PKU), caused by phenylalanine-4-hydroxylase (PAH) deficiency and hyperphenylalaninemia (HPA), associated with tetrahydrobiopterin (BH_4) metabolic disorders [2]. The pterin-dependent form of hyperphenylalaninemia accounts for about 2% of all cases of HPA. These conditions are caused by a deficiency of enzymes involved in the synthesis or reduction of tetrahydrobiopterin (BH_4), which is a PAH cofactor, as well as tyrosine hydroxylase and tryptophan hydroxylase [3, 4]. Currently, several genetically heterogeneous forms of BH_4-deficient HPA are known: type A, 6-pyruvoyltetrahydropterine synthase (PTPS) deficiency, type B, guanosine triphosphate cyclohydrolase 1 (GTPCH) deficiency, type C, dihydropterine reductase (DHPR) deficiency, type D, pterin-4a-α-carbinolamine dehydratase (PCBD) deficiency, DOPA-dependent dystonia caused by sepiapterin reductase (SPR) deficiency and HPA without tetrahydrobiopterin deficiency, caused by mutations in the DNAJC12 gene encoding the JDP1 protein [5, 6]. Pterin-dependent forms of HPA have clinical manifestations similar to classical PKU. In these forms, the main role in the pathogenesis is played by a *severe* deficiency in the neurotransmitters of the catecholamine and serotonin series, which makes isolated diet therapy meaningless and requires different approaches to treatment. The complex of treatment for such patients includes BH_4 or its synthetic analogs [3-5].

Clinical case. Child A., a boy, was admitted to the clinic at the age of 11 months due to a pronounced delay in psychomotor development. From the anamnesis: the child from the second pregnancy, the pregnancy was uneventful, was born on time with a weight of 3240 g, a length of 54 cm. The parents are not consanguineous, they are healthy. They have one healthy child. During the examination under the program of mass screening of newborns, A. was diagnosed with hyperphenylalaninemia. The level of phenylalanine in the blood was 940 μmol / L. Based on this, he was diagnosed with phenylketonuria and prescribed diet therapy with restriction of protein intake. With strict adherence to a low-protein diet, the level of phenylalanine in the blood during the first two months of life decreased insignificantly, to 610 μmol / L, and then decreased to normal values, 75-100 μmol / L. Upon admission to the clinic, there is a deficiency of body weight and height, moderately pronounced microcranium, light hair color. Neurological status: symptoms of muscular dystonia are determined - moderate hypotonia of the trunk muscles and hypertonicity of the muscles of the extremities, tendon reflexes are increased. When the position of the body changes, there is an increase in muscle tone, tremor, and oculogyric crises. Poorly holds the head, does not turn on the stomach, grabs the toy and holds it for a short time. In the clinical analysis of blood and urine pathological changes were not revealed. In the study of the concentration of amino acids in the blood by tandem mass spectrometry, the level of phenylalanine was 102 μmol / L. The lack of positive dynamics in the psychomotor development of the child while following a low-protein diet, which ensures the maintenance of a normal level of phenylalanine in the blood, made one suspect a cofactor form of hyperphenylalaninemia. In order to diagnose BH_4 - deficient HPA, a sensitivity test to sapropterin dihydrochloride was carried out, which gave a positive result. The patient is recommended to undergo a molecular genetic study - sequencing of the PTS, QDPR, GCH1, PCBD, SPR, DNAJC12 genes to determine the specific type of BH_4 - deficient HPA.

Keywords: PTS, QDPR, GCH1, PCBD, SPR, DNAJC12 genes, BH_4 - deficient HPA

IMPACT OF ANGIOTENSIN-1 CONVERTING ENZYME GENE INSERTION/DELETION (I/D) POLYMORPHISM ON DIABETES MELLITUS SUSCEPTIBILITY AMONG AZERBAIJAN POPULATION

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ABSTRACT

The association between the angiotensin-converting enzyme (ACE) insertion/deletion (I/D) gene polymorphism and the risk of diabetes mellitus developing in the Azerbaijan population is not studied yet. Therefore, the aim of the present study was to investigate the association of ACE I/D gene polymorphism and the risk of developing diabetes in Azerbaijan population. A total of 200 individual consisting of 100 control subjects and 100 patients with diabetes mellitus (28 patients I type DM (11 male and 17 female); 72 patients II type DM (21 male and 51 female)) were recruited. DNA was extracted from the blood samples. Genotyping of ACE I/D gene polymorphism done by PCR and mistyping of the II and DD genotypes was conducted with an insertion/deletion-specific primer. The genotyping frequency for the II, ID and DD polymorphism of the ACE gene ID=63, DD=36, II=1 in case subjects. The genotyping frequency for the II, ID and DD polymorphism of the ACE gene in control group: ID=49, DD=26, II=25. The frequency for the D allele is 0.67 and the

frequency of I allele is 0.325 in case group. The frequency for the D allele is 0.505 and the frequency of I allele is 0.495 in control group. The dominant and recessive models revealed alleles on separate groups and at the population level: DD:DR=13.6; ID:IR=15; ID:DD=0.35; DD:ID= 2.97; DR: IR=3.26; IR:DR=0.3. Based on the results, D allele showed significant association with risk of disease. This finding revealed the association of I/D polymorphism with risk of type 2 diabetes. However, further studies with larger sample size are necessary to confirm the association of the I/D polymorphism of the ACE gene and diabetes mellitus in Azerbaijan population.

Keywords: angiotensin-converting enzyme (ACE) insertion/deletion (I/D) gene polymorphism.

ARTIFICIAL INTELLIGENCE ON THE IDENTIFICATION OF DIABETES-RELATED OSTEOMETABOLIC DISORDERS

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INTRODUCTION

Complications of diabetes mellitus (DM) are of great medical and social importance, as they cause severe disability and premature death of patients with diabetes mellitus. Bone remodeling disorders occurring in diabetes increase the risk of fractures and move the problem of diabetic osteopathy beyond the narrow specialty, making it the subject of extensive scientific research [1-3]. However, osteopathy remains an underestimated complication and is not considered in most diabetes guidelines. The fact that diabetic osteopathy is often asymptomatic leads to the fact that diabetic patients turn their attention to this pathology late and turn to a specialist, as a rule, already having a high degree of progression of this complication. One of the important issues is the timely detection and prediction of bone changes in diabetes mellitus.

The introduction of artificial intelligence technologies (AIT) into clinical practice is one of the main trends in world medicine [4]. AIT and Artificial Neural Networks (ANN) can fundamentally change the criteria for diagnosis and prognosis, which will contribute to the development of new therapeutic approaches, improve the efficiency of medical care and reduce costs [5]. The prospects for using ANN can potentially provide almost limitless technical possibilities. Considering the possibilities of using these technologies in clinical practice, we came to the conclusion that the development and implementation of forecasting systems based on the construction of a model of an intelligent decision support system based on the apparatus of artificial neural networks is able to analyze clinical and laboratory indicators of patients with diabetes mellitus (DM) in order to predict the values of qualitative and quantitative indicators assessing the state of bone tissue.

PATIENTS AND METHODS

The research was conducted from November 2015 to July 2017. A cross-sectional study evaluating the data of 98 patients with type 1 diabetes (female: 57, male: 41) and 137 patients with type 2 diabetes (female: 85, male: 52) aged from 40 to 69 years, who have not previously been diagnosed with bone metabolism disorders and osteoporosis was evaluated. Exclusion criteria: persons previously treated for osteoporosis or having a history of fracture, as well as patients with diseases of the

endocrine system, liver and kidneys of a non-diabetic nature, with a history of stage 4-5 diabetic nephropathy. The state of bone formation was judged by the activity of total alkaline phosphatase (ALP) and the content of the aminoterminal propeptide collagen type I (PINP) in blood serum. The level of bone resorption was judged by the content of the C-terminal telopeptide (b-CTx). All patients underwent dual-energy X-ray absorptiometry (DXA) of the lumbar spine (L1-L4) to measure bone mineral density (BMD).

The relationship between the results of laboratory studies and the parameters of bone metabolism was revealed when analyzing the results of this study.The study of the above patient data gave the researchers a list of 30 variables, including the BMD value for each of the patients, which were used to develop of ANN model. All of the variables considered, according to previous medical studies, have an impact on the diagnostic and prognosis of osteoporosis. The construction of the neural network was carried out using MATLAB 8.6 (R2015b) [6].

RESULTS

The practical effect of the constructed Artificial neural network model for predicting BMD and values of bone remodeling markers in diabetes based on the analysis of a number of laboratory pa-rameters has been proved. The topology of the model consisted of an input layer, a hidden layer, and an output layer. A model with final ANN parameters was trained using data from 80% of patients from a randomly selected database. Data from the remaining 20% of patients were used to verify the results. As a result of the measurement of the absolute error average value, some adjust-ments were made to the model settings to increase its adequacy. Further training is achieved during its practical operation. The learning process continued until errors were reduced for all examples and stopped at the moment when the error in the control

sample began to increase. For ease of use, a visual interface was created. Comparative analysis of this approach showed that the values obtained using the neural network diagnostic model reproduce the clinical research picture with a high degree of adequacy, which allows building a diagnostic algorithm for stratification impaired bone metabolism in diabetes.

CONCLUSION

The constructed neural network model is capable of predicting BMD and values of bone remodeling markers in patients with diabetes mellitus in accordance with the results of their laboratory analyzes. This model can be used to determine which patients should undergo densitometry and analysis of bone remodeling markers to check bone quality and prevent some of the risks associated with osteoporosis.

Keywords: Artificial Neural Network, diabetes, reparative osteogenesis

ПРЕНАТАЛЬНАЯ ДИАГНОСТИКА ХРОМОСОМНЫХ БОЛЕЗНЕЙ У ПЛОДА

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Пренатальная диагностика — раздел медицинской генетики, направленный на раннее выявление и профилактику наследственных заболеваний и врожденных пороков развития , в последние годы получила особенно бурное развитие. В обзоре суммированы наиболее важные достижения пренатальной диагностики, достигнутые благодаря широкому внедрению новых молекулярно-генетических технологий, позволяющих с высокой точностью анализировать нарушения микроструктуры хромосом, генов и продуктов их экспрессии. Новые технологии, существенно увеличившие возможности пренатальной диагностики и делающие ее более эффективной и безопасной, позволяют значительно снизить естественный генетический груз наследственной патологии в популяции. Вместе с тем внедрение этих методов создает определенные организационные и методические трудности, делает необходимым вносить коррективы в устоявшийся за много лет традиционный алгоритм пренатальной диагностики.

Как совместить очевидные преимущества новых диагностических методов и подходов с существующим алгоритмом пренатальной диагностики? Как при этом не растерять уже имеющийся положительный опыт врачей-акушеров, генетиков, лаборантов, привыкших к определенной последовательности действий в сложной иерархии алгоритмов основных и вспомогательных служб пренатальной диагностики? Основные современные молекулярно

генетические технологии в пренатальной диагностике включают: молекулярную диагностику хромосомных болезней, микроделеционный анализ с помощью микрочипа (сравнительная геномная гибридизация —array CGH) , доимплантационную диагностику хромосомных и генных болезней , неинвазивную пренатальную диагностику (НИПД) хромосомных и генных болезней методом секвенирования ДНК плода в крови матери (секвенирование нового поколения —NGS), упредительное генетическое тестирование для выявления мутаций у супругов при планировании беременности(1).

Все большей популярностью в пренатальной диагностике пользуется метод КФ-ПЦР для массовой диагностики (скрининга) частых хромосомных аномалий у плода. Следует отметить, что при своей кажущейся простоте, как показывает наш многолетний опыт, применение метода требует не только соответствующего оборудования

(секвенатора типа ABI 3600), но, что особенно важно, специалиста высокой квалификации с большим опытом молекулярно-генетической диагностики.

Решающим успехом молекулярно-генетического подхода в пренатальной диагностике явился метод количественной флюоресцентной ПЦР (КФ-ПЦР), позволяющий резко повысить производительность пренатальной диаг-ностики наиболее частых хромосомных болезней (трисомии по хромосомам 21, 13, 18, численные нарушения гоносом), на долю которых приходится свыше 95 % всей хромосомной патологии у новорожденных(2). Диагностика возможна на любом сроке беременности и практически на любом материале плода, полученном при инвазивных вмешательствах. Секвенатор ABI 3100, который чаще всего используется для этих целей, позволяет анализировать 12–16 образцов в день и получать результаты уже на следующие сутки. Важно, что скорость анализа позволяет использовать метод КФ-ПЦР для получения информации о рас-пространенных хромосомных аномалиях у плода в поздние сроки беременности . Данный метод внедрен в пренатальную диагностику нашего клиники еще в 2008 г. В нашей лаборатории этим методом уже проведено около 500 пренатальной диагностики, и почти в 300 случаях у плодов были выявлены хромосомные нарушения (5). Высокие производительность и чувствительность, рутинное использование для анализа клеток амниотической жидкости, а при необходимости — любых клеток плода, относительно низкая себестоимость по сравнению со стандартным кариотипированием не оставляют сомнения в необходимости его широкого использования в пренатальной диагностике. За последние несколько лет метод

получил широкое распространение благодаря появлению отечественных коммерческих наборов, необходимых для молекулярного маркирования анализируемых хромосом. Оригинальные наборы на соответствующие полиморфные локусы разработаны также и в нашей лаборатории. Согласно нашему опыту, на каждую анализируемую хромосому важно иметь наборы олигопраймеров, достаточных для анализа не менее 5–6 полиморфных сайтов, что обычно гарантирует информативность теста(3).

Однако в некоторых случаях все полиморфные аллели гомологичных хромосом могут оказаться одинаковыми, что делает их неинформативными и затрудняет диагностику методом КФ-ПЦР. Другим осложнением являются необычные варианты (аллели) маркерного локуса, наличие которых требует дополнительного исследования геномов родителей. Трудности диагностики касаются также численных нарушений половых хромосом и хромосомного мозаицизма. Таким образом, несмотря на кажущуюся простоту, следует еще раз отметить что, анализ методом КФ-ПЦР должен выполняться специалистом, имеющим навык в молекулярно-генетических исследованиях. Учитывая селективность теста, следует также помнить, что он не заменяет стандартного кариотипирования плода, позволяющего выявить аномалии числа и структуры всех хромосом набора. В этой связи мы считаем более оправданным применение данного теста в группе риска женщин с измененными показателями сывороточных маркерных белков , а при наличии УЗ-маркеров предпочитаем использование стандартного кариотипирования. Вместе с тем, согласно рекомендациям Европейского цитогенетического общества возможно использование метода КФ-ПЦР и при наличии УЗ-маркеров хромосомной патологии у плода (4).

Ключевые слова: Пренатальная диагностика ; амниотическая жидкость; хромосомные аномалии; врожденные пороки развития КФ-ПЦР.

R761H M694I, M694V, V726A, R202Q, M680I AND E148Q MEFV GENE (FAMILIAL MEDITERRANEAN FEVER GENE) MUTATIONS IN THE AZERBAIJANİAN PATİENTS

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MEFV gene (Familial Mediterranean Fever Gene) is located on chromosome 16 - 16.13.3., and it is composed of 3,242,028- 3,256,776 nucleotides. It is specified as having an autosome-recessive hereditary type. Autosome-dominant hereditary species were also recorded.

The MEFV RoRet genes family contains exon 10, consisting of 10,000 nucleotide sequences. The length of the transcript consists of 3.7 thousand nucleotide sequences consisting of 761 synthesized pyridine protein amino acid bases MEFV gene researches were performed in the population of the Republic of Azerbaijan. Over 80 mutations have been identified so far. Four missense mutations (M680I, M694V, M694I, and V726A) in exon 10, together with E148Q in exon 2, account for the majority of FMF mutations in populations originating from areas around the eastern Mediterranean region. The various combinations of MEFV mutations are largely associated with the phenotypic variability of the disease. The most serious complication of FMF is the development of renal amyloidosis, which may be the only manifestation of the disease. The molecular-genetic study of the MEFV gene isolated from the genome DNA of 18 patients suspected of Family Disease Fever has identified 7 mutations: R761H M694I, M694V, V726A, R202Q, M680I and E148Q. All patients were of Azerbaijan origin, from the Mediterranean region of Azerbaijan. They were evaluated for clinical findings and family history of FMF.

Seven mutations of MEFV gene were identified in heterozygous, homozygous and compound conditions: R761H M694I, M694V, V726A, R202Q, M680I and E148Q. The mutations E148Q and R202Q were discovered in exon 2 and R761H M694I, M694V, V726A, M680I were found in exon10 in the population of the Republic of Azerbaijan. Three of 18 examined patients were heterozygotes, eight homozygotes, and seven double heterozygotes (compounds). Two mutations R202Q and E148Q were found in exon 2 (28.57%) of the MEFV gene, but the remaining five mutations, M860I, R761H, M694I, M694V and V726A were located in the exon 10 of the gene (71.43%). R202Q mutation was found in two heterozygous patients, mutation E148Q was heterozygous in one patient and as compound in two patients (R202Q /E148Q).

The homozygous form of R761H mutation was registered in four cases, and M694I mutation in two persons in compound state (R761H / M694I). M680I mutation was identified to be homozygous in two patients (M680I / M680I). The M694I mutation was found in compound state separately with two other mutations as M694V and R202Q (M694I/ M694V and M694I / R202Q).

The mutation of the V726A was identified as homozygous in three cases. It should be noted, that patients with homozygous form of mutations had parents in consanguineous marriages.

The highest gene frequency of the MEFV gene examined in 18 patients was 27.3% which belongs to R761H mutation. The

second place takes mutation V726A (18.2%), and M694I (15.2%) stands in the third place.
To prevent the hereditary disease of the Family of Mediterranean Fever, parents of 18 patients were invited to the consultation of physician-genetics. Parents have got information about a healthy child prognosis for the next pregnancy. When the inheritance type is autosomal-recessive, it has been reported that the risk of a childbirth in the next pregnancy is 25%. As the majority of families are in reproductive age, they are preparing for the prenatal diagnosis of the fetus in the next pregnancy with their consent.
Keywords: gene, population, sequencing, nucleotide, amplification, exon

ABOUT THE DYNAMIC DEVELOPMENT OF THE HEALTH AND PHARMACEUTICAL SECTOR IN AZERBAIJAN

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Introduction. In the Republic of Azerbaijan in the period 2009-2019 years for the implementation of large-scale measures for the dynamic development of healthcare, decrees were signed on the approval of the State Program for the implementation of the development of the National Strategy in this, mainly, this is strengthening the material and technical base of medical institutions, the use of modern methods of examination and treatment, improving the quality of medical and pharmaceutical services to the population, state regulation of prices for essential medicines, training and improvement of personnel, introduction of compulsory health insurance.

Goal. The purpose of this work was to study the new economic foundations of financing the healthcare system in Azerbaijan, analyze the reforms in healthcare and the pharmaceutical sector, and apply them in practice. To achieve this goal, a number of local regulatory laws, as well as the activities of medical and pharmaceutical services to the population, were studied.

Discussion. During this period, our country has taken extensive measures to solve problems in the field of healthcare and the pharmaceutical sector. The regulatory legal acts governing pharmaceutical activities have been approved. In particular, state regulation of prices in the sphere of circulation of medicines has been introduced to prevent unjustified increases, as well as the application of measures of liability provided for by the legislation of the Republic of Azerbaijan for violation of the pricing procedure for medicines included in the list of essential medicines. In accordance with international standards, the quality control of medicines has been strengthened, the rules for issuing medicines have been improved, new prescription forms have been introduced, and admission to doctors is monitored.
Keywords: healthcare, pharmaceutical sector, reform analysis

INHERITED THROMBOPHILIA AND COVID-19

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COVID-19, which is caused by severe acute respiratory syndrome coronarvirus 2 (SARS-CoV-2), has spread across the globe. Although most patients recover within 1 to 3 weeks, COVID-19 has already caused >1 500 000 deaths all over the world. SARS-CoV-2 enters cells by binding to the angiotensin-converting enzyme 2 receptor, which is expressed on

respiratory epithelial cells and other cell types, including endothelial cells. Unchecked viral replication induces a florid host response characterized by dysregulation of inflammation and coagulation. Dysregulation of coagulation produces a coagulopathy associated with hypercoagulability as evidenced by venous and arterial thrombosis and multiorgan dysfunction. Up to 20% of affected patients require hospitalization, and the mortality rate in such patients is high. The coagulopathy associated with COVID-19 is characterized by mild thrombocytopenia, slight prolongation of the prothrombin time, high levels of D-dimer, and elevated levels of fibrinogen, factor VIII, and von Willebrand factor. The levels of D-dimer, a breakdown product of cross-linked fibrin, correlate with disease severity and predict the risk of thrombosis, the need for ventilatory support, and mortality [1].

Novel coronavirus pneumonia (NCP) (COVID-19) is a disease caused by the enveloped viral pathogen severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). NCP, which is a major health problem worldwide, still has no definitive treatment or vaccine. Acute respiratory distress syndrome (ARDS) and sepsis are the main complications of the disease [2]. Additionally, disseminated intravascular coagulation (DIC) is one of the main underlying causes of death among patients [1]. A high number of thrombotic complications exist, and the incidence of thrombotic disease in individuals affected by NCP is reported to be 31% [3]. The brain and lungs were affected by the hypercoagulable state, and anticoagulant therapy should be started in these NCP patients [4].

Although the underlying pulmonary pathophysiology remains incompletely understood, severe COVID-19 infection is associated with a marked alveolar inflammatory cell infiltrate, together with a systemic cytokine storm response [5]. Several studies have also reported evidence of a COVID-19 associated coagulopathy [6,7,8]. Furthermore, multivariate regression analysis in Chinese COVID-19 cohorts reported that elevated plasma levels of fibrin degradation D-dimers constituted an independent biomarker for poor prognosis in COVID-19 [8]. Consistent with the hypothesis that coagulation activation may play a role in COVID-19 pathogenesis, post-mortem studies have highlighted marked pathological changes specifically involving the lung microvasculature, including disseminated micro-thrombi and significant hemorrhagic necrosis [9,10]. Moreover, emerging data suggest that severe COVID-19 is also associated with a significant increased risk for developing deep vein thrombosis and pulmonary embolism [11,12].

Inherited thrombophilia is a genetic disorder of blood coagulation resulting in a hypercoagulable state, which has been suggested as a possible cause of recurrent thromboembolism. Family and twin studies have established a heritable component to venous and arterial thrombosis. For the vast majority of patients, thrombosis is a complex, multifactorial disease caused by a combination of numerous, often unknown, environmental and genetic factors [13].

The aim of this study was to analyze how important is to perform genetic testing for detection the intensity of connection between inherited thrombophilia (Factor V Leiden, Prothrombin G20210A and MTHFR C677T gene mutations) and the incidence of thrombotic disease in individuals affected by NCP.

SECONDARY INFECTION IN CANCER PATIENTS OF THE MUSCULOSKELETAL SYSTEM

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Infectious diseases complications remain one of the main problems of surgery. Infections are one of the causes of canser patients morbidity and mortality, along with tumor diseases. The frequency of postoperative wound complications varies between 3-34% depending on the type of surgery [5]. Cancer patients are more susceptible to the systematic immunosuppresive state, caused by malignant neoplasms and directly by antitumor therapy. It is obvious that the anticancer problem of treatment and prevention of secondary infections in these conditions becomes even more urgent than before.

Objective: To analise infections complications (IC) caused by microorganisms depending on antitumor treatment in cancer patients.

Materials and methods: The study included 41 (100%) cancer patients with infectious complications during antitumor treatment in the Azerbaijan Medical University (AMU) Cancer clinic for skin and soft tissue neoplasms. Most often, the pathological process was lokalized in the lower extremities in 19 (46%) patients; in the upper extremities in 14 (34,1%)

patients: in the trunk in 8 (19,5%) patients. Of these 12 patients (29,2%) patients received treatment for posteopertive complicattions, 10 (24%) patients received treatment for complications – related to chemotherapy and 19 (46%) patients received treatmentrelated to radiation therapy. There were 28 (68%) men and 13 woman (36,5%) patients. The age of the patients ranged from 34 to 82 years among the studied patients with soft tissue tumors 24 (58%), skin tumors 17 (41,4%) patients .

Results and discussions: for postoperative complications, the patients were divided by severity: uncomplicated – 12 (100%) patients (mostly superficial, not reguiring extensive surgical interventios) and complicated- 0 patients- (involving

superficial and deep structures, often requiring extensive surgical interventions). Early diagnosis of infectious complications in patients with this pathology, the appointment of adequate regimens of antibiotic prophylaxis and therapy contribute to reducing the level of mortality from infection in this category of patients, and the expanding possibilities of specific antitumor treatment.

NEUROIMAGING DATA OF THE STUDY OF THE CHIASMAL-SELLAR REGION STRUCTURES

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Background: Sphenoid sinus (SS) is separated by a septum with various position, therefore sizes of two sinus cavities are variable [2]. In addition, sphenoid sinus differs in pneumatization type, ranging from its absence to extensive forms.Knowledge of the linear size and shape of the skull, the structure of the sphenoid sinus and its interconnection with nearby structures will help to avoid complications when performing surgical endoscopic interventions in the chiasmal-sellar region. Currently, the transsphenoid approach is the most optimal in neurosurgery for intracellar and cranial pathologies treatment. Due to proximity and anatomical interconnection of sphenoid sinus with other anatomical structures, such as anterior knees of intracavernous segments of internal carotid artery (ICA), optic nerve (ON), there is a high risk of complications during surgery [1,2,3,4].
Purpose: Features of skull craniometric parameters, the type sphenoid sinus pneumatization, and its practical value in various ON and ICA positions.
Methods: The retrospective research, using magnetic resonance imaging (MRI) scans of head, included 1111 people, with 410 males and 701 females out of them but the scope of the article is limited to 93 of them, including 34 males (37%) and 59 females (63%) aged from 20 to 71 years. The research design complies with the Helsinki Declaration's provisions and was approved by the Local Ethics Committee of the West Kazakhstan Medical University named after Marat Ospanov №50 from January 17, 2020. The average age of males was 41.6 (20 – 71 years), and for females was 41.7 (20 – 66 years). Inclusion criteria were as the following: 1) age range from 20 to 71 years, 2) patients living in Aktobe region, 3) patients sent for examination with pituitary (hypophysis) pathology, 5) patients referred with CSR vascular pathology, 6) patients referred for verification of CSR pathology diagnosis. Exclusion criteria were as the following: 1) patients with skull bones fractures, 2) patients after skull trepanation, 3) patients having orthodontic and orthognathic research at examination time, 4) patients with congenital skull malformations, having gross skull deformation, 5) patients with brain tumors and hemorrhages with obvious CSR compression at examination time, 6) pregnancy, lactation, long-term use of hormonal drugs by persons of both gender. With the RadiAnt Dicom Viewer 5.5.1 program measured craniological indices: crosslongitudinal skull index, degree of pneumatization of the sphenoidal sinus; protrusion and/or gaping of internal carotid artery canal and optic nerve.Allstatistical analyses were performed using Statistica 8.0.
Results: The data we obtained show that the vast majority of older males (60-80 years old) had mesocrane skull shape, in contrast to females, among whom the frequency of brachycrane skull shape prevails. Among 20-40 years aged males, the highest percentage falls on mesocrane skull form, while in females the frequencies of mesocrane and brachycrane skull forms are relatively the same. In males and females with ages of 40-60 years, mesocrane and brachycranean skull forms are almost half of the total number of cases. An interesting fact was that dolichocranous skull shape is absolutely not found in both males and females of 40-80 years old age. The skull structure distribution by gender. Based on the sphenoid sinus types classification by Ossama & Guldner, our research revealed that there is no Conchal type (type I) in both genders. In 20-40 age, type III prevailed among males, while type IV has a maximum among females. Types III and IV predominated among males and females of 40-60 years old age. In 60-80 years category, type III prevails among females, while males have two times less. Type II is absent among 40-60 aged males and 60-80 aged females. As per the research of anatomical structures close to SS, it was found that ON and ICA canals form protrusions on the inner surface of the sphenoid sinus

sidewall. The protrusion degree was ranged from a slight depression on the lateral wall to a complete "immersion" of canals into the sinus. No protrusion of ON and ICA canals were found in 60-80 years old males in 80% of cases, while complete absence of protrusion was shown in case of the same age females. However, protrusion of only the ICA canal occurs in 60% of cases with over 60 years old age females, while the same was in only 20% with the same age males.

There was no case of ON canal protrusion in males, but ON canal gave a protrusion in sphenoid sinus wall in 49% of 20-40 years old females. ON and ICA canals protrusion in 20-60 years old males was found in about 30%, and the same protrusion was found in 60-80 years old females in 40%.

Conclusions: This study is aimed at identifying the features of structure of the sphenoidal sinus, focusing on the absence of a dolichocrane type of skull among the population, on the clear distinction between men and women by the type of skull structure and the features of pneumatization of the sphenoidal sinus. The presellar type of sphenoidal sinus has a virtually low adherence to changes in sinus canals in types II and IV. Thus, careful planning of trans-sphenoid access to the sella is possible with modern imaging methods. Different anatomical variations can be detected so that problems can be predicted to be assessable. In order to avoid morbid consequences during surgery, it is imperative that clinicians determine the location and extent of sphenoid sinus walls and its relation to adjacent vital structures whenever trans-sphenoid pituitary surgery is expected. The few surgical tips related to sphenoid sinus anatomical configuration are important to keep in mind during such an approach.

Keywords: MRI; sphenoid sinus; pneumatization; internal carotid artery; optic nerve.

MORPHOFUNCTIONAL CHARACTERISTICS OF THE THYMUS IN SEVEN OLD RATS UNDER CONDITIONS OF MOUNTAIN HYPOXIA IN KYRGYZSTAN

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Annotation. In recent years, the problem of hypoxia has attracted more and more attention of experimenters and clinicians, as the study of various aspects of hypoxia has shown the universal role of short-term or longer-term effects of oxygen deficiency in the regulation of the body's activity and the development of pathology. The most populated regions are those located in the low mountains (from 200 to 1400 m above sea level) and the middle mountains (from 1400 to 2500 m). The high mountains fall at a height of up to 3200 m.

Currently, there is no doubt that the immune system also plays a certain role in the complex response of the human and animal bodies to the effect of hypoxia. In this regard, it can be stated that the immunology of the adaptation process and the study of its mechanisms in hypoxia is one of the main tasks of environmental immunology, the subject of which is the study of changes in immunoreactivity under the influence of environmental factors.

The aim of this study is to study the morphofunctional structures of the thymus gland in seven - month-old rats . **Material and methods of research**: the histology of the thymus was studied in 60 seven-month-old rats living in various ecological and climatic conditions of kyrgyzstan.

1.anatomical methods (preparation). under the binocular magnifier mbs-2, the thymus was isolated and purified from surrounding tissues.2. Histological methods (hemotoxylin-eosin staining, according to Van Gieson). **The results and discussion.** It was established during the autopsy that the thymus in seven month-old rats is small in size, soft in consistency, its surface is lobed .The thymus gland is a small organ of pinkish-gray color, soft consistency, its surface is lobed. The cortical layer contains a large number of lymphoid cells, located very closely. On the periphery of the cortical layer, under the capsule, there are lymphoblasts. There are also many lymphoid elements in the brain layer, but much less than in the cortical layer. There is blood in the medullar layer between the cellular elements. In some places in the cortical substance there are epithelial-like cells and Gassal bodies. The number of the latter is not greater than normal. There is no Gassal at all in individual lobules of thymus. Bishkek in low-mountains conditions, i.e. 770 m above sea level, all indicators of the control group are within the normal range. Indicators in Bishkek it was established, lymphoblasts on average make 14,5 ±0,4; average lymphocytes 13,3 ±0,3; small lymphocytes 166,4 ±1,1; apoptotic bodies 77,8± 0,5; Mitoses 12,4± 0,3; Gassal corpuscles 1,7± 0,2. Stereometric characteristic of the thymus in three month-old rats shows: cortical substance 41,1 ±0,4, medullary substance makes 24,7 ±0,3. Intra-lobular perivascular space (VPP) 12,3± 0.3.interlobular septa is 22.8 ±0.4.

In high-mountains conditions (3200 m above sea level), a noticeable change in cells, for example, the number of lymphoblast counts increased by 3.44%, medium lymphocytes increased by 2.03%, small lymphocytes by 316.8%. Apoptotic bodies 59.8%, mitoses 2.1%, Gassal corpuscles increased by 0.09%. Exponent macrophages increased by 0.12%. Stereometric characteristics thymic cortex of seven-month-old rats26 .67 %. The medulla to increased by 6.99 %., Intra-lobular perivascular space (VPP) by 1.66%. Interlobular septa increased by 7.98%.

In the conditions of the middle mountains of Cholpon-Ata(1660 m above sea level), cell counts decreased, for example, the number of indicators of lymphoblasts decreased by 2.33%, average lymphocytes are 1.96%, small lymphocytes by 285.21%. Apoptosis bodies increased by 60.6%, mitoses by 2.13%, and Gassal bodies grew by 0.05% . Macrophage

indicators increased by 0.14% . The stereometric characteristic of the cortical substance is 17.34%. The medulla is 6.62%. The intra-lobular perivascular space (VPP) is 1.32%. Interlobular septa is 5.68 per cent.

The indicators of this study, newborn rats at high mountains conditions Naryn (2000 m above sea level) dynamics of cell populations in the conditional unit area of the cortical substance of the lobules of the thymus have a seven-month rats slightly decreased performance of the cells compared to the Midlands Cholpon-ATA

Thus, the city of Bishkek in low-mountains conditions, i.e. 770 m above sea level, all indicators of the control group are within the normal range. In high-mountains conditions (3200 m above sea level), a noticeable change in cells, for example, the number of lymphoblast counts increased by 3.44%, medium lymphocytes increased by 2.03%, small lymphocytes by 316.8%. Apoptotic bodies 59.8%, mitoses 2.1%, Gassal corpuscles increased by 0.09%. Exponent macrophages increased by 0.12%. Stereometric characteristics thymic cortex of seven-month-old rats 26.67 %. Brain matter increased by 6.99 %., Intra-lobular perivascular space (ILP) by 1.66%. Interlobular septa increased by 7.98%. The data of Cholpon-Ata compared to Bishkek are slightly increased. Figures in mountainous Naryn (2000 m above sea level) dynamics of cell populations in the conditional unit area of the cortical substance of the lobules of the thymus have a seven-month rats revealed slightly decreased performance of the cells compared to medium Cholpon-Ata.

A NOVEL PEPTIDE MODULATOR OF THE HUMAN CHANNEL NAv1.5 FROM LATRODECTUS TREDECIMGUTTATUS SPIDER VENOM

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Spider venom contains a wide repertoire of pharmacologically active compounds, and in the case of some spider species bite, toxins from spider venom can play a fatal role for humans as well as other organisms. Among all the spiders, one could say the bite of *Latrodectus tredecimguttatus,* known as Black Widow spider, is very dangerous and can even lead to tragic consequences. Especially, voltage-gated sodium channels are responsible for propagating action potentials in excitable cells. Nav1.5 plays a crucial role in the human cardiac muscle, where it enhances the influx of sodium ions via the cell membrane, causing the fast depolarization phase of the cardiac action potential. It is also an important therapeutic target for heart disorders. Various venom-derived peptides have been observed as potential modulators of sodium channels, and these biologically active peptides are an abundant source for pharmacological tools.

The aim of this study was to determine a novel peptide modulators of the human channel Nav1.5 in the venom of the Kazakhstan Black Widow spider (*L. tredecimguttatus*).

The spiders (*L. tredecimguttatus*) were captured from the South and West regions of Kazakhstan. Venom was extracted to find novel neurotoxins and determine their activity on ion channels. Gel filtration chromatographic technique along with reverse-phase high-pressure liquid chromatography (R-P HPLC) was used for extensive purification. The next step was the functional screening of the purified components applying patch clamp electrophysiology. The functional screening revealed the presence of several ion channel modulators in Black Widow spider venom. Subsequently, MALDI-TOF and Edman degradation were applied to determine the molecular weight and peptide sequence. Determination of the peptide sequence allowed us to deduce toxin sequences and establish a sequence similarity with other similar toxins.

A novel peptide modulator of the human channel Nav1.5 was isolated and identified as Ltre-2. The average molecular mass of the isolated toxin was 3.5 kDa.

Further studies of Black widow spider toxins will help to better understand the structure-functional relationships, identification of binding sites on modulated ion channels and also explain the relationship between venom envenomation and symptoms.

PROBLEM OF MEDICAL STUDENTS WHICH PREVENT FORMING A HEALTHY LIFESTYLE

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Background: The study of the problems of forming a healthy lifestyle is due to the increase and change in the nature of loads on students in connection with:
-the introduction of new educational programs that require a large proportion of students ' self-training; -emotional pressure - the case of a pandemic causes fear and limits the communication of students; many students do not live in a family, work part-time;
-increasing risks of man-made nature (worldwide digitalization, introduction of IT technologies); These loads provoke negative changes in the state of health of students.
Purpose: 1) Identify the main factors that prevent the formation of a healthy lifestyle of medical students. 2) Suggest optimal ways to solve stressful situations that prevent the formation of a healthy lifestyle for medical students. **Materials and methods of research: Cross-sectional single-stage study.**
A voluntary anonymous questionnaire of 3rd course students of the “Semey Medical University” Non-Commercial Joint Stock Company was conducted.
To the smartphones of 623 students of the 3rd course of the School of Medicine sent a message with questions of the questionnaire.
253 students (40.6% of the total number) aged from 18 to 25 years took part in the survey.
Results of research: According to the survey, the formation of a healthy lifestyle among medical students is largely hindered by the behavior of the older generation. Therefore, by imitating the behavior of parents, the growing generation acquires negative and harmful habits, attitudes to lifestyle and behavior issues. In addition, it is important to note that the expression of recommendations on healthy habits in an edifying form often causes a reaction of protest.
It is very important to note that the introduction of a student to a healthy lifestyle should begin with the formation of health motivation.
Conclusions: Therefore, in order to develop measures to increase motivation for a healthy lifestyle among students of the non-profit joint-stock company “Semey Medical University”, it is necessary to develop and implement a comprehensive program for health promotion and solving various stressful situations that hinder the observance of a healthy lifestyle at The University.
According to the results of the survey, it is recommended that the main directions in solving the above problems should be:
Conduct a survey of students to find out bad habits and develop measures to help students get rid of them (together with a psychologist);
Control the quality / nutritional value of meals in the University canteen and review the menu, organize food outlets in the non-profit joint-stock company “Semey medical University".

OBESITY IN CHILDREN AS A FACTOR OF MYOCARDIAL REMODELING

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ABSTRACT

The epidemic of childhood obesity with the subsequent development of metabolic syndrome (MS), cardiovascular pathology and endocrine disorders causes the need for early diagnosis and timely treatment of children of this group, which allows us to consider this pathology the most urgent problem of modern medicine.
28 (28.6%) of the examined patients showed an increase in the content of IRI in the blood serum, 5 (5.1%) had fasting glycemia, 6 (6.1%) had impaired glucose tolerance, the excess of the HOMA index was observed in 56 (57.1%), an increase

in CS in 6 (6.1%), TG in 18 (18.4%). The combination of these changes includes children under the age of 10 years in the risk group for MS in 84.6 %, and in children 10 years and older; it is possible to diagnose MS in 56.9 % of cases (IDF, 2007). Activation of neuro-humoral mechanisms and violation of metabolic processes contributed to the development of arterial hypertension in 24 (24.5%) children, concentric LV remodeling in 18 (18.4%), concentric LV hypertrophy in 8 (8.2%) and eccentric LV hypertrophy in 7 (7.1%) children according to the results of ECHO-KG.
Keywords: children, obesity, cardiovascular pathology, remodeling

INTRODUCTION

REVELANCE: The epidemic of childhood obesity with the subsequent development of metabolic syndrome (MS), cardiovascular pathology and endocrine disorders causes the need for early diagnosis and timely treatment of children of this group, which allows us to consider this pathology the most urgent problem of modern medicine. **RESULTS:** PATIENTS AND METHODS: 98 children and adolescents with abdominal obesity were examined (IDF, 2007). Blood pressure was measured, laboratory parameters of carbohydrate metabolism (fasting glucose level and after exercise after 2 hours, the level of immunoreactive insulin (IRI), calculation of the HOMA index) and lipid metabolism (cholesterol (CS), triglycerides (TG)) were studied, ECHO-KG was performed. Types of left ventricular (LV) remodeling were evaluated according to the classification of A. Ganau et al. in the modification of Devereux R.B. (1986). **RESULTS OF THE STUDY:** 28 (28.6%) of the examined patients showed an increase in the content of IRI in the blood serum, 5 (5.1%) had fasting glycemia, 6 (6.1%) had impaired glucose tolerance, the excess of the HOMA index was observed in 56 (57.1%), an increase in CS in 6 (6.1%), TG in 18 (18.4%). The combination of these changes includes children under the age of 10 years in the risk group for MS in 84.6 %, and in children 10 years and older; it is possible to diagnose MS in 56.9 % of cases (IDF, 2007). Activation of neuro-humoral mechanisms and violation of metabolic processes contributed to the development of arterial hypertension in 24 (24.5%) children, concentric LV remodeling in 18 (18.4%), concentric LV hypertrophy in 8 (8.2%) and eccentric LV hypertrophy in 7 (7.1%) children according to the results of ECHO KG.
CONCLUSIONS: Thus, obesity in children and adolescents is accompanied by pronounced changes in carbohydrate and lipid metabolism and LV myocardial remodeling mainly in the concentric type, which indicates a high risk of cardiovascular diseases (CVD) and requires early correction of metabolic disorders, development of preventive measures.

THE STRUCTURE OF THE CAUSES OF DEATHS WITH COVID-19 DURING THE PANDEMIC

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Introduction. According to the World Health Organization, to date (December 2020) 1 519 193 Covid-19 deaths have been officially registered. Clinical manifestations can range from flu-like symptoms such as fever, dry cough, myalgia, and fatigue, often associated with hypo / anosmia and age [1,2], to more severe conditions with shortness of breath and respiratory distress requiring hospitalization in an intensive care unit. therapy and extended respiratory care [3,4]. The most common clinical manifestation of coronavirus infection is bilateral pneumonia, with 3-4% of patients developing acute respiratory distress syndrome (ARDS), but the exact mechanism of how Covid-19 leads to ARDS is unclear [5].
Goal. To study the structure of the causes of deaths with Covid-19 during a pandemic.
Methods. A retrospective study was carried out on the basis of the therapeutic department of the city clinical hospital. An analysis was carried out on 76 case histories of deceased persons for the period from June to September 2020. In the course of studying the case histories, it was revealed that ARDS is in first place in the number of deaths (55.26%), of which 52.38% were men, the remaining 47.62% were women. The second is heart failure (HF) (19.74%). In third place is multiple organ failure (MOF) (15.79%). The last position in the list of causes of death is taken by pulmonary embolism (PE), with 9.21%, respectively.It should be noted that sepsis was absent among the causes of death, since all patients were required to use antibacterial drugs. The overwhelming majority of deceased persons belonged to the age category 50-54 and 55-59 years old, where the deaths from ARDS were 9.52 and 14.28; from CH 13.33 and 33.33; from PON 16.67 and 25% and from PE in both groups at 28.57%, respectively. This, in turn, confirms the need to study polymorbid conditions in this age category of persons.
Conclusion. The results of our study show that the main causes of death in people with Covid-19 were ARDS, heart and multiple organ failure, mainly in the 50-60 year old category of people. The causes associated with heart disease were infarction, myocarditis, dilated cardiomyopathy, acute coronary syndrome due to hypoxemia. Thus, indicators such as gender, age and nationality are the most important risk factors for mortality in people with Covid-19. Virtually all countries affected by the disease, including Kazakhstan, have developed mitigation and containment strategies based on social

distancing.

Keywords: Covid-19, causes, deaths, ARDS, pandemic, heart failure, multiple organ failure, risk factors.

NEUROIMAGING DATA OF THE STUDY OF THE CHIASMAL-SELLAR REGION STRUCTURES

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Background: Sphenoid sinus (SS) is separated by a septum with various position, therefore sizes of two sinus cavities are variable [2]. In addition, sphenoid sinus differs in pneumatization type, ranging from its absence to extensive forms.Knowledge of the linear size and shape of the skull, the structure of the sphenoid sinus and its interconnection with nearby structures will help to avoid complications when performing surgical endoscopic interventions in the chiasmal-sellar region. Currently, the transsphenoid approach is the most optimal in neurosurgery for intracellar and cranial pathologies treatment. Due to proximity and anatomical interconnection of sphenoid sinus with other anatomical structures, such as anterior knees of intracavernous segments of internal carotid artery (ICA), optic nerve (ON), there is a high risk of complications during surgery [1,2,3,4].
Purpose: Features of skull craniometric parameters, the type sphenoid sinus pneumatization, and its practical value in various ON and ICA positions.
Methods: The retrospective research, using magnetic resonance imaging (MRI) scans of head, included 1111 people, with 410 males and 701 females out of them but the scope of the article is limited to 93 of them, including 34 males (37%) and 59 females (63%) aged from 20 to 71 years. The research design complies with the Helsinki Declaration's provisions and was approved by the Local Ethics Committee of the West Kazakhstan Medical University named after Marat Ospanov №50 from January 17, 2020. The average age of males was 41.6 (20 – 71 years), and for females was 41.7 (20 – 66 years). Inclusion criteria were as the following: 1) age range from 20 to 71 years, 2) patients living in Aktobe region, 3) patients sent for examination with pituitary (hypophysis) pathology, 5) patients referred with CSR vascular pathology, 6) patients referred
for verification of CSR pathology diagnosis. Exclusion criteria were as the following: 1) patients with skull bones fractures, 2) patients after skull trepanation, 3) patients having orthodontic and orthognathic research at examination time, 4) patients with congenital skull malformations, having gross skull deformation, 5) patients with brain tumors and hemorrhages with obvious CSR compression at examination time, 6) pregnancy, lactation, long-term use of hormonal drugs by persons of both gender. With the RadiAnt Dicom Viewer 5.5.1 program measured craniological indices: crosslongitudinal skull index, degree of pneumatization of the sphenoidal sinus; protrusion and/or gaping of internal carotid artery canal and optic nerve.Allstatistical analyses were performed using Statistica 8.0.
Results: The data we obtained show that the vast majority of older males (60-80 years old) had mesocrane skull shape, in contrast to females, among whom the frequency of brachycrane skull shape prevails. Among 20-40 years aged males, the highest percentage falls on mesocrane skull form, while in females the frequencies of mesocrane and brachycrane skull forms are relatively the same. In males and females with ages of 40-60 years, mesocrane and brachycranean skull forms are almost half of the total number of cases. An interesting fact was that dolichocranous skull shape is absolutely not found in both males and females of 40-80 years old age. The skull structure distribution by gender. Based on the sphenoid sinus types classification by Ossama & Guldner, our research revealed that there is no Conchal type (type I) in both genders. In 20-40 age, type III prevailed among males, while type IV has a maximum among females. Types III and IV predominated among males and females of 40-60 years old age. In 60-80 years category, type III prevails among females, while males have two times less. Type II is absent among 40-60 aged males and 60-80 aged females. As per the research of anatomical structures close to SS, it was found that ON and ICA canals form protrusions on the inner surface of the sphenoid sinus
sidewall. The protrusion degree was ranged from a slight depression on the lateral wall to a complete "immersion" of canals into the sinus. No protrusion of ON and ICA canals were found in 60-80 years old males in 80% of cases, while complete absence of protrusion was shown in case of the same age females. However, protrusion of only the ICA canal occurs in 60% of cases with over 60 years old age females, while the same was in only 20% with the same age males. There was no case of ON canal protrusion in males, but ON canal gave a protrusion in sphenoid sinus wall in 49% of 20-40 years old females. ON and ICA canals protrusion in 20-60 years old males was found in about 30%, and the same protrusion was found in 60-80 years old females in 40%.

Conclusions: This study is aimed at identifying the features of structure of the sphenoidal sinus, focusing on the absence of a dolichocrane type of skull among the population, on the clear distinction between men and women by the type of skull structure and the features of pneumatization of the sphenoidal sinus. The presellar type of sphenoidal sinus has a virtually low adherence to changes in sinus canals in types II and IV. Thus, careful planning of trans-sphenoid access to the sella is possible with modern imaging methods. Different anatomical variations can be detected so that problems can be predicted

to be assessable. In order to avoid morbid consequences during surgery, it is imperative that clinicians determine the location and extent of sphenoid sinus walls and its relation to adjacent vital structures whenever trans-sphenoid pituitary surgery is expected. The few surgical tips related to sphenoid sinus anatomical configuration are important to keep in mind during such an approach.

Keywords: MRI; sphenoid sinus; pneumatization; internal carotid artery; optic nerve.

ДИАГНОСТИЧЕСКИЕ ОСОБЕННОСТИ ЗЛОКАЧЕСТВЕННЫХ ОПУХОЛЕЙ ДЕТЕЙ ПЕРВОГО ГОДА ЖИЗНИ.

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РЕЗЮМЕ

В работе представлены структура, диагностические особенности и результаты лечения злокачественных новообразований (ЗН) детей первого года жизни. Проведен ретроспективный анализ 170 детей в возрасте от 0 до 12 месяцев с различными ЗН, с 2015 по 2019 гг.в условиях НЦПДХ. У детей первого года жизни солидные опухоли составили 76%, гемобластозы — 24%, из которых 53% были дети с ОМЛ, 45% с ОЛЛ, с ХМЛ 2%. Различные транслокации выявлены у 11% детей с острым лейкозом, среди которых реаранжировки гена MLL выявлены в 64% случаев острого лимфобластного лейкоза Наличие амплификации N-mic пациентов с нейробластомами составили 20%. Общая выживаемость детей с солидными опухолями детей до 1 года составил 70%, Процент выживаемости детей с гемобластозами составил 46%.

Ключевые слова: злокачественные новообразования, дети до 1 года

Актуальность: Злокачественные опухоли у детей первого года жизни являются глобальной проблемой современности, обладают целым рядом особенностей, как в структуре, так и во времени выявления, отличающих их от опухолей у детей старшего возраста [1,2,3].

Результаты исследования: Проведен ретроспективный анализ 170 детей в возрасте от 0 до 12 месяцев с различными злокачественными новообразованиями (ЗН), госпитализированных в Научный центр педиатрии и детской хирургии за период с 2015 по 2019 гг. Учитывались: время постановки диагноза, разновидность, иммунологический и гистологический вариант опухоли, наличие генетических транслокаций. Общую выживаемость (ОВ) рассчитывали по методу Каплана–Майера. Количество выявленных ЗН в данной возрастной группе в среднем составило 34 случаев в год (2015г.-35, 2016г.-34, 2017г.-50, 2018г.-30, 2019г-20). В структуре преобладали ретинобластомы — (22%), лейкозы – 20%, нейробластома -20 %, нефробластомы -9%, гепатопластома-8%, герминогенные опухоли 8%. Опухоли ЦНС и лимфомы встречались очень редко по 1%, опухолей костей не зарегистрировано. Различные транслокации выявлены у 11% детей с ОЛ, среди которых реаранжировки гена MLL выявлены в 64% случаев ОЛЛ, наличие амплификации N-mic пациентов с нейробластомами составили 20% (у 4 из 20). Среди пациентов с солидными опухолями процент общей выживаемости составил 70%, Процент

выживаемости детей с гемобластозами составил 46% (рисунок 1-2).
Выводы: Выявлено преобладание эмбриональных опухолей (76%):
В структуре острых лейкозов отмечен высокий процент ОМЛ (53%), среди которых выявлен большой процент прогностически неблагоприятного М7 варианта, что показывает кардинальную разницу в стуктуре ОЛ в данной возрастной группе.
В 29 % случаев возраст на момент постановки диагноза составил старше 6 месяцев, тогда как пренатально диагностированы только 5%

PROGNOSTIC VALUE OF N-MYC GENE AMPLIFICATION IN PATIENTS WITH NEUROBLASTOMA

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ABSTRACT

This work presents the results of studying the prognostic value of the N-MYC gene amplification in patients with neuroblastoma treated according to the European protocol NB-2004. A retrospective analysis of 140 patients who were diagnosed with neuroblastoma from 2013-2019 was carried out at the SCP and PS. When collecting data from 140 patients with neuroblastoma, amplification of the N-MYC gene was found in 26 patients, of which 19 patients died (73%), 7 patients are alive (survival rate -27%). Amplification of the NMYC gene occurred with the same frequency in boys and girls, 50% in each group. In children under one year old, there were 6 children (23.1%), 1-2 years old 12 patients (46.2%), 2-5 years old 5 children (19.2%), over 5 years old 3 patients (11.5%). In 13 (50%) children, the primary tumor was localized in the adrenal glands, in 11 (42%) - in the retroperitoneal space and in 2 (7.7%) in the mediastinum. In 21 (80.8%) patients with amplification of the N-MYC gene, the disease was diagnosed at stage IV, in 2 cases (7.7%) with stage IVs, and 1 (3.8%) case at I, II, III stage of the disease. Thus, patients with N-MYC gene amplification were more often detected at stage IV of the disease and had an unfavorable outcome.The fact of the negative impact of amplification of the N-MYC gene is confirmed in our study. The therapeutic protocol is ineffective in the presence of N-MYC gene amplification (survival - 27%). **Key words:** Neuroblastoma, NMYC gene amplification, prognosis, children.

INTRODUCTION

REVELANCE: Neuroblastoma (NB) - an embryonic malignant tumor of childhood, is a common extracranial solid tumor. Amplification of the N-MYC gene in patients with NB is one of the main indicators of the aggressiveness of the disease, early resistance to chemotherapy, and poor prognosis [1-4].
RESULTS: To study the prognostic value of N-MYC gene amplification in patients with NB treated according to the European protocol NB-2004 at the SCP and PS of the city of Almaty, Republic of Kazakhstan from 2013 to 2019. During data collection, 140 patients with NB were identified; we found amplification of the N-MYC gene in 26 children, 19 of them died (73%),7 patients are alive (survival rate -27%). Comparative analysis was carried out according to the following parameters: age at the time of diagnosis, gender, stage of the disease, tumor localization. Amplification of the NMYC gene

occurred with the same frequency in boys and girls, 50% in each group. In children under one year old, there were 6 children (23.1%), 1-2 years old 12 patients (46.2%), 2-5 years old 5 children (19.2%), over 5 years old 3 patients (11.5%). In 13 (50%) children, the primary tumor was localized in the adrenal glands, in 11 (42%) - in the retroperitoneal space and in 2 (7.7%) in the mediastinum. In 21 (80.8%) patients with amplification of the N-MYC gene, the disease was diagnosed at stage IV, in 2 cases (7.7%) with stage IVs, and 1 (3.8%) case at I, II, III stage of the disease. Thus, patients with N-MYC gene amplification were more often detected at stage IV of the disease and had an unfavorable outcome.
CONCLUSIONS: The fact of the negative impact of amplification of the N-MYC gene is confirmed in our study. The therapeutic protocol is ineffective in the presence of N-MYC gene amplification (survival rate - 27%).

МОРФОЛОГИЯ КИШЕЧНО-АССОЦИИРОВАННЫХ ЛИМФОИДНЫХ ОБРАЗОВАНИЙ ТОНКОЙ КИШКИ БЕЛЫХ КРЫС В РАННЕМ ОНТОГЕНЕЗЕ

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Актуальность. Слизисто-ассоциированная лимфоидная ткань представляет собой неотъемлемый и важный элемент иммунокомпетентной системы организма [1,2]. Однако до сих пор остаются слабо освещенными вопросы о формировании лимфоидного аппарата периферических органов иммунной системы экспериментальных животных в раннем онтогенезе. Изучение структурных преобразований лимфоидной ткани, ассоциированной с кишечником, в основном с тонкой кишкой, в процессе антенатального и постнатального периодов развития необходима для понимания становления иммунологических функций лимфоидных образований в раннем периоде онтогенеза [3,4].
Цель исследования. Изучение микроанатомической организации и клеточного состава лимфоидных бляшек тонкой кишки у белых крысят в антенатальном и раннем постнатальном периодах развития. **Материалы и методы исследования.** Материалом для морфологического исследования явились 36 тонкой кишки плодов и новорожденных белой крысы.
В эксперименте были учтены закономерности развития беременности у белых крыс [5]. Течение беременности у белых крыс состоит из четырех периодов: I - 3-5 сутки беременности (доимплантационный период); II - 7-9 сутки (ранний постимплантационный период); III - 13-15 сутки (период функционирования зрелой плаценты); IV - 19-21 сутки (период старения плаценты).
Результаты и их обсуждение. Лимфоидные образования тонкой кишки у потомства белых крыс начинают выявляться на 18-19 сутки антенатального развития. До этого срока, в местах развития лимфоидной ткани тонкой кишки наблюдались скопления мезенхимы с кровеносными сосудами.
На I этапе развития (18-19 сутки) у плодов белых крыс определяются зачатки органа (1,9±0,09), содержащие стромальные клетки и малые лимфоциты.
Выводы. 1. В процессе становления микроанатомической организации и дифференцировки клеточного состава лимфоидных бляшек у потомства белых крыс можно выделить 4 этапа развития, которые соответствуют следующим срокам: I- этап – 18-19 сутки внутриутробного развития; II-этап – 20-21 сутки внутриутробного развития; III-этап – 1-4 сутки жизни постнатального периода; IV-этап – 5-7 сутки жизни постнатального периода развития.
2. Проведенные исследования позволяют лучше понять закономерности строения и развития органов иммуногенеза, позволяя стандартизировать морфологические данные в процессе физиологического онтогенеза. 3. Полученные данные могут быть использованы морфологами и иммунологами, как эталон, при исследований органов иммуногенеза и моделировании биологических экспериментов.

ХАРАКТЕРИСТИКА ПАЦИЕНТОВ С ПЕРВИЧНЫМИ ИММУНОДЕФИЦИТНЫМИ СОСТОЯНИЯМИ

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РЕЗЮМЕ

В данной работе представлен анализ результатов ретроспективного исследования 76 пациентов с первичными иммунодефицитными состояниями (ПИДс), получивших лечения в НЦПДХ с 2013 по 2019 года. Среди них мальчиков было 70%, девочек - 30%. Выявляемость этих заболеваний преобладала в период с 2015 года по 2016год. Наиболее многочисленная группа в структуре случаев ПИДс, диагностированных в НЦПДХ, была представлена аутовоспалительными заболеваниями – 37%. На втором и третьем месте находились гуморальные

иммунодефициты по 21% и дефекты фагоцитоза – 11%. Длительность додиагностического периода составила от 3х месяцев до 9 лет и выше, в среднем 1год 7 месяцев. Средний возраст на момент диагностики ПИДс 3,5 года. Ведущим синдромом всех ПИДс оставались инфекционные осложнения, которые составили 52% случаев и были представлены в основном пневмониями и рецидивирующими вирусными инфекциями. При проведении молекулярно-генетического исследования, генетически диагноз ПИДС был подтвержден в 24% случаев. 8 пациентам была проведена ТГСК, данный метод показал эффективность в терапии детей с некоторыми видами ПИДс.
Ключевые слова: Первичные иммунодефицитные состояния, диагностика, генетическое исследование.

ВВЕДЕНИЕ

Первичные иммунодефицитные состояния (ПИДс) – это группа заболеваний, обусловленные генетическими нарушения системы иммунитета, характеризующиеся дефектами одного или нескольких ее компонентов. По литературным данным выделяют 9 групп ПИДс, основанных на диагностике более 250 известных генетических мутаций [1,2].

Цель исследования: Изучение выявляемости ПИДс, клинических особенностей с оценкой эффективности терапии на базе Научного центра педиатрии и детской хирургии (НЦПДХ).

Материалы и методы исследования: Был проведен ретроспективный анализ 76 пациентов, получавших лечение в разные периоды с 2013 по 2019 годы. Полученные данные подвергнуты стандартным методам статистической обработки.

Результаты исследования: За период с 2013 по 2019 годы в НЦПДХ было выявлено 76 случаев ПИДс. Среди них мальчиков было 54 (70%), девочек - 23 (30%). Выявляемость этих заболеваний в разные годы была различной, преобладала в период с 2015 года по 2016год (рисунок 1). Наиболее многочисленная группа в структуре случаев ПИДс, диагностированных в НЦПДХ, была представлена аутовоспалительными заболеваниями – 28 (37%). На втором и третьем месте находились гуморальные иммунодефициты по 16 (21%) и дефекты фагоцитоза – 9 (11%). В практике НЦПДХ не встречались пациенты с дефектами врожденного иммунитета и фенокопии ПИД, вызванные соматическими мутациями. Длительность додиагностического периода составила от 3х месяцев до 9 лет и выше, в среднем 1год 7 месяцев. Средний возраст на момент диагностики ПИДс 3,5 года. Ведущим синдромом всех ПИДс оставались инфекционные осложнения, которые составили 52% случаев и были представлены в основном пневмониями и рецидивирующими вирусными инфекциями (рисунок 2). Среди других симптомов ПИДс частыми были тромбоцитопения, БЦЖиты. При проведении молекулярно-генетического исследования, генетический диагноз ПИДс был подтвержден в 18 случаях (23,7%). Среди пациентов нашего исследования ТГСК проведена 8 пациентам: 2пациентам с ТКИН, 2 пациентам с синдромом Вискотта-Олдрича, 4 – с ХГБ. Среди 8 пациентов, получивших ТГСК, живы 6 пациентов, 1 ребенок умер в раннем посттрансплантационном периоде в связи реактивацией цитомегаловирусной инфекции. В настоящее время живы 63 ребенка, умерли 10 детей от различных инфекционных и аутоиммунных осложнений, выбыли из наблюдения 3 детей.

Выводы: В структуре случаев ПИДс, диагностированных в НЦПДХ, наибольшее количество случаев представлены аутовоспалительными заболеваниями – 37%. Далее следуют гуморальные иммунодефициты (21%) и дефекты фагоцитоза (17%).

Низкая настороженность врачей первичного звена обусловила длительный додиагностический период, который составил от 3 месяцев до 9 лет, в среднем 1 год 7 месяцев.

АНАЛИЗ ОРГАНИЗАЦИИ МЕДИЦИНСКОЙ ПОМОЩИ ДЕТЯМ С ГЕМОФИЛИЯМИ В

РЕСПУБЛИКЕ КАЗАХСТАН

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РЕЗЮМЕ

Всего под динамическим наблюдением в Казахстане состоит 461 ребенок с наследственными нарушениями свертывания крови. Из них с гемофилией А – 344 ребенка. Дети с гемофилией в РК обеспечиваются факторами свертывания из Республиканского бюджета. На сегодняшний день на регулярной основе профилактическую заместительную терапию получают 313 детей со среднетяжелой и тяжелой формами гемофилии А. Остальные дети с легкой формой гемофилии получают факторы свертывания при факте кровотечения.
Всего зарегистрировано 37 случаев ингибиторной формы, что составило 10,7% от всех случаев гемофилии А. С 2012 года в РК начала проводиться терапия индукции иммунной толерантности (ИИТ), направленная на инактивацию ингибиторов путем воздействия высоких доз фактора VIII. Из 37 детей с ингибиторами, 19 детям начата терапия ИИТ. Полный ответ на терапию наблюдался у 5 детей. Еще у 4 детей наблюдается хорошая

элиминация ингибитора, планируется перевод их на профилактическую терапию. У 4 детей сохраняются высокий уровень ингибиторов в крови, что расценено как неэффективность ИИТ. Остальные дети продолжают терапию.
Диагностика и терапия детей с гемофилией в РК осуществляется в соответствии с мировой практикой. Распространенность заболевания составляет 6-7 случаев на 100000 детского населения. Сопоставимость с мировой статистикой свидетельствует о достаточном уровне диагностике заболевания. Ключевые слова: [Гемофилия А, индукция иммунной толерантности]

ВВЕДЕНИЕ

На сегодня одним из самых генетически расшифрованных редких заболеваний в мире является гемофилия. Уже более двух десятков лет во всем мире благодаря применению препаратов факторов свертывания улучшилось качество жизни детей с гемофилией. Однако, сохраняющаяся высокой частота геморрагических проявлений, сложности в поддержании приверженности к терапии у пациентов, связанные с пожизненным регулярным внутривенным введением препаратов, ведут к разработке новых методов терапии [1,2,3.]
Целью нашего исследования был анализ организации медицинской помощи детям с гемофилией в Республике Казахстан.
Результаты: проведен анализ статистических учетных форм, данные республиканской информационной системы «Электронный регистр диспансерного больного», данные карт динамического наблюдения дневного стационара Научного центра педиатрии и детской хирургии. Всего под динамическим наблюдением в Казахстане состоит 461 ребенок с наследственными нарушениями свертывания крови. Из них в структуре превалирует гемофилия А – 344 ребенка. Распространенность заболевания составляет 6-7 случаев на 100000 детского населения. Сопоставимость с мировой статистикой свидетельствует о достаточном уровне диагностике заболевания.
В структуре гемофилии А наиболее частой является среднетяжелая форма – 43,9%, несколько реже (40,7%) тяжелая форма. Группа пациентов с легкой формой составляет 15,4%.
С 2004 года дети с гемофилией в РК обеспечиваются факторами свертывания из Республиканского бюджета. На сегодняшний день на регулярной основе профилактическую заместительную терапию получают 313 детей со среднетяжелой и тяжелой формами гемофилии А. Остальные дети с легкой формой гемофилии получают факторы свертывания при факте кровотечения.
Одним из тяжелых осложнений заместительной терапии является развитие ингибиторов против фактора VIII или IX в результате чего гемостатическая терапия становится неэффективной [2,4]. Всего зарегистрировано 37 случаев ингибиторной формы, что составило 10,7% от всех случаев гемофилии А.
С 2012 года в РК начала проводиться терапия индукции иммунной толерантности (ИИТ), направленная на инактивацию ингибиторов путем воздействия высоких доз фактора VIII. Из 37 детей с ингибиторами, 19 детям начата была терапия ИИТ. Полный ответ на терапию наблюдался у 5 детей. Еще у 4 детей наблюдается хорошая элиминация ингибитора, планируется перевод их на профилактическую терапию. У 4 детей сохранялись частые гемартрозы и высокий уровень ингибиторов в крови, что расценено как неэффективность ИИТ. Остальные дети продолжают терапию.
Таким образом, диагностика и терапия детей с гемофилией в РК осуществляется в соответствии с мировой практикой, хотя еще имеются некоторые проблемы.

ВЫВОД

Диагностика и терапия детей с гемофилией в РК осуществляется в соответствии с мировой практикой. Распространенность заболевания составляет 6-7 случаев на 100000 детского населения. Сопоставимость с мировой статистикой свидетельствует о достаточном уровне диагностике заболевания.

КЛИНИКО-ДИАГНОСТИЧЕСКИЕ ОСОБЕННОСТИ ДЕТЕЙ С ЛИМФОМОЙ ХОДЖКИНА.

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РЕЗЮМЕ

В работе представлены клинико- диагностические особенности лимфомы Ходжкина у детей. Проведен ретроспективный анализ 62 детей в возрасте от 0 до 18 лет с лимфомой Ходжкина, с 2013 по 2019 гг.в условиях Научного центра педиатрии и детской хирургии (Казахстан). Возрастной пик заболеваемости у детей преимущественно приходится на возраст с 10 до 18 лет, что составило 51,7%. Из гистологических вариантов преобладал — нодулярный склероз (58%). По локализации с поражением периферических лимфоузлов выявлено у 55 (88,7%), лимфоузлов средостения у 4 (6,5%), лимфоузлов, расположенных ниже диафрагмы у 3(4,8%). У большинства пациентов (около 88,3%) заболевание регистрировано на II и III стадиях. 88,9% пациентов до постановки клинического диагноза лечились по месту жительства с различными инфекционными заболеваниями. Анализ ранних клинических проявлений лимфомы Ходжкина показал, что ошибки диагностики связаны, со сходством их симптоматики на начальных этапах развития с воспалительными заболеваниями. Отсутствие своевременного выявления и онконастороженность первичной медико-санитарной помощи и родителей приводит к поздней постановке диагноза

Ключевые слова: лимфома Ходжкина, дети, ранняя диагностика

ВВЕДЕНИЕ

Несмотря на успехи в лечении лимфомы Ходжкина до настоящего времени остается нерешенной проблема их ранней диагностики, что несомненно сказывается на отдаленных результатах лечения. [1]. Результаты исследования: Исследование основано на данных ретроспективного анализа 62 пациентов с лимфомой Ходжкина, в возрасте от 0 до 18 лет, находившихся в Научном центре педиатрии и детской хирургии с 2013 по 2019г. При оценке по возрасту – преобладали пациенты 10-15 лет – 32,3% (20), реже 3-5 лет – 24,2% (15), 6-9 лет – 24,2% (15), 16 -18 лет 19,4% (12) . По половому признаку 53,2% (33) мальчиков и 46,8% (29) девочек. По локализации с поражением периферических лимфоузлов у 55 (88,7%), лимфоузлов средостения у 4 (6,5%), лимфоузлов, расположенных ниже диафрагмы выявлены у 3(4,8%). По гистологическим вариантам НС у 36(58%), СМ-КЛ 11 (17,8%), Л-ПР 11(17,8%), ЛИ у 1 (1,6%), БДУ у 4(6,4). По стадиям наблюдались следующие показатели: 1ст – 3(5%), 2ст- 27 (45%), 3ст- 26 (43,3%), 4ст-4 (6,7%). У 38(61,3%) отмечалась В-симптоматика; у 24 (38,7%) без интоксикации. У 72,2% (26) до постановки клинического диагноза лечились по месту жительства с – острый лимфаденит; с острым бронхитом 11,1% (4); с кардитом 2,8% (1), эпидемическим паротитом 2,8% (1), с неврологическими нарушениями 5,5% (2), не лечились 2,8% (1), своевременно обратились к детскому онкологу 2,8(1).

ВЫВОД

Анализ ранних клинических проявлений лимфомы Ходжкина показал, что ошибки диагностики связаны, со сходством их симптоматики на начальных этапах развития с воспалительными заболеваниями. Отсутствие своевременного выявления и онконастороженность ПМСП, родителей приводит к поздней постановке диагноза.

ОПЫТ ПРОВЕДЕНИЯ ГАПЛОИДЕНТИЧНОЙ ТРАНСПЛАНТАЦИИ ГЕМОПОЭТИЧЕСКИХ СТВОЛОВЫХ КЛЕТОК С ИСПОЛЬЗОВАНИЕМ ТЕХНОЛОГИИ ИМУННОМАГНИТНОЙ СЕПАРАЦИИ ЛИМФОЦИТОВ

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РЕЗЮМЕ

В материале представлено мнение об эффективности деплеции альфа/бета-Т-лимфоцитов при трансплантации гемопоэтических стволовых клеток (ТГСК) от гаплоидентичных доноров, путем снижения риска реакции «трансплантат против хозяина» (РТПХ) и посттрансплантационных осложнений. Данная технология связана с внедрением Т-клеточной деплеции, в котором выделение из трансплантата только зрелых лимфоцитов несущих Т клеточный рецептор TCRα/β,позволяет оставлять в трансплантанте только Т-клетки несущие TCRγδ рецептор,которая не обладает аллореактивностью, и является профилактикой реакции трансплантата против хозяина. В нашем центре проведено 10 технологии деплеции TCRα/β и CD19 клеток с момента внедрения. Трансплантант заготавливается путем аферез ГСК+ деплеция TCRα/β и CD19 клеток. Костный мозг донора стимулировали Г-КСФ в дозе 10мг/кг в течение 5дней. Процедура афереза ГСК периферической крови проводилась на первый день ТГСК на автоматическом сепараторе клеток крови Spectra Optia (США). Сбор СК периферической крови по времени в среднем длилось 5,5 часа, объем собранного продукта афереза составило – 320мл (±40 мл). В нашем опыте полученный трансплантант при использовании технологии истощения TCRα/β и CD19 клеток соответствовал международным рекомендациям гаплоТГСК, а восстановление мегакариоцитарного и гранулоцитарного ростков у детей отмечались на +15(±4)день после ТГСК.
Ключевые слова: гаплоидентичная трансплантация гемопоэтических стволовых клеток

ВВЕДЕНИЕ

ТГСК последние десятилетия является безальтернативным методом лечения ряда агрессивных гемобластозов, синдромов костномозговой недостаточности и врожденных иммунодефицитов, и остается методом, ассоциированным с высоким риском развития тяжелых, подчас инвалидизирующих и смертельных осложнений [1,2]. Без сомнения, трансплантация гемопоэтических стволовых клеток (ГСК) от совместимого родственного и неродственного донора наиболее эффективный вариант при лечении злокачественных заболевании у детей и подростков. Тем не менее, для многих пациентов отсутствие совместимого донора является препятствием к своевременному проведению ТГСК, а поиск в международной базе доноров стволовых клеток (СК) занимает длительное время по отношению соматическому состоянию пациента. Отсюда следует, поиск альтернативных источников ГСК для трансплантации, к которым относится гемопоэтические стволовые клетки пуповинной крови или гаплоидентичный донор[3,4].

В 2016 году Научный центр педиатрии и детской хирургии впервые внедрил технологию разработанную совместно с группой ученных из Тюбингена(Германия), суть которой - внедрение Т-клеточной деплеции, где выделение из трансплантата только зрелых лимфоцитов несущих Т-клеточный рецептор TCRα/β,позволяет оставлять в трансплантанте только Т-клетки несущие TCRγδ рецептор, что не обладает аллореактивностью, и является профилактикой реакции трансплантата против хозяина.В нашем центре проведено 10 технологии деплеции TCRα/β и CD19 клеток с момента внедрения. Трансплантант заготавливается путем аферез ГСК+ деплеция TCRα/β и CD19 клеток. Костный мозг донора стимулировали Г-КСФ в дозе 10мг/кг в течение 5дней. Процедура афереза ГСК периферической крови проводилась на первый день ТГСК на автоматическом сепараторе клеток

крови Spectra Optia (США). Сбор СК периферической крови по времени в среднем длилось 5,5 часа, объем собранного продукта афереза составило – 320мл (±40 мл), (таблица1). Собранный материал подвергся обработке по стандартному протоколу магнитной сепарации клеток при помощи аппарата CliniMacs, Miltenyi Biotec. В данной таблице 1 отражены обработка клеточного продукта согласно стандартного протокола. Результаты магнитной сепарации TCRα/β и CD19 клеток проанализированы, продукт сепарации отдельно.

ВЫВОД

Таким образом, в нашем опыте полученный трансплантант при использовании технологии истощения TCRα/β и CD19 клеток соответствовал международным рекомендациям гаплоТГСК, а восстановление мегакариоцитарного и гранулоцитарного ростков у детей отмечались на +15(±4)день после ТГСК.

BETA-LACTAMASE GENES CARRIED BY MULTI-DRUG RESISTANT ENTEROBACTERIACEAE

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Background: The prevalence of the beta-lactam resistant enterobacteriaceae, specifically the 3rd generation cephalosporins and carbapenems, is steadily increasing and spreading globally. Antibiotic resistance is supported by various molecular mechanisms, including intrinsic and acquired resistance genes.. Here, we examined an antibiotic resistance phenotype and beta-lactam gene content of MDR clinical isolates of enterobacteriaceae, recovered from patients atintensive care units of multi-profile hospitals in the Country of Georgia.
Materials/methods: Bacterial isolates were collected between July 2017 and May 2019 from four clinical sites inGeorgia. Bacterial identity and antimicrobial susceptibility were determined b the Vitek 2 automated system according to CLSI

standards. Antimicrobial resistance gene content was examined by multiplex PCR (Streck Inc.), targeting plasmid mediated AmpC and beta-lactamases, representing fifteen gene families.
Results: 168 specimens, consisting of Klebsiella pneumonia (n=72), Pseudomona aeruginosa (n=35), Escherichia coli (n=51) and Serratia marcescens (n=10) were selected for this study. It was found that 100%, 97%, 94% and 78% of S. marcescens, P. aeruginosa, K. pneumonia and E.coli isolates, respectively, were multi-drug (MDR) resistant. CTX-M-15 or CTX-M-14 extended spectrum beta-lactamase genes were detected in 100% of MDR K. pneumonia and E.coli strains, followed by 78% and 13% found among MDR S. marcescens and P. aeruginosa . In addition to CTX-M-15 gene, subset of K. pneumonia co-harbor OXA-48 (n=15) or NDM (n=8) carbapenem resistance genes, whereas single E.coli isolates were found to also carry OXA-48 (n=1), NDM (n=1), VIM (n=2) and IMP (n=2) carbapenem resistance genes. In addition, only two strains of S. marcescens demonstrated the presence of OXA-48. VIM and IMP were found in 11 and 2 strains of P. aeruginosa, respectively. DHA and EBC were co-harbored together by one isolate of E.coli, and CMY-2 was found in single isolate. MOX ACC and FOX genes were not detected in any of presented isolates.
Conclusions: Multi-drug resistance has been observed in bacterial isolates recovered in the hospital. Detection highly transmissible plasmid associated resistance genes indicatesthe high potential for horizontal spread of resistance that in combination with already existing multi-drug resistance could lead to the emergence of a novel “superbug” in Georgia.

РЕЗУЛЬТАТЫ ТЕРАПИИ ПАЦИЕНТОВ С ДИАГНОЗОМ «НЕЙРОБЛАСТОМА» СОГЛАСНО ПРОТОКОЛУ NB-2004

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РЕЗЮМЕ

Нейробластома (НБ) – самая распространенная экстракраниальная солидная опухоль детского возраста, развивающаяся из клеток-предшественников симпатической нервной системы
Цель. Оценить результаты лечения пациентов с диагнозом «нейробластома» согласно протоколу NB-2004 в Научном центре педиатрии и детской хирургии (НЦПиДХ)
Материалы и методы. Проанализированы 113 случаев НБ, установленных в НЦПДХ с 2015 по ноябрь 2020 года: 57 мальчиков и 56 девочек. Медиана возраста на момент постановки диагноза 21,5 месяцев (0,8-191,8). Локализация опухоли: забрюшинно у 93 пациентов, в средостении – у 12; и в средостении, и забрюшинно – у 3, в области шеи – у 3, без первичного очага – у 2. В 22,1% случаев выявлена амплификация гена N-MYC, 1p - 5,3%. Стратификации на группы риска: «observation group» - 26 пациентов (23%), группа промежуточного риска (ГПВ) – 14 (12,4%), группа высокого риска – 73 больных (64,6%).
Анализ общей выживаемости (ОВ) и бессобытийной выживаемости (БСВ) выполнен методом Каплан-Майера в программе IBM SPSS Statistics.
Результаты. Медиана наблюдения составила – 20,4 месяца (0,03-132,43). Пятилетняя ОВ составила – 61,9%. 2-летняя БСВ – 35%. Прогрессия НБ отмечалась в 24 случаях (21,2%), рецидив НБ – у 18 пациентов (15,9%). ОВ в группе высокого риска – 43,8%, в ГПВ – 85,7%, в группе низкого риска – 100%. 37 пациентам из группы высокого риска проведена ауто-ТГСК. ОВ в группе после ауто-ТГСК – 54,1%. Медиана наблюдения после ауто-ТГСК – 12,47 месяцев (0,13 месяцев до 61,03 месяца).
Выводы. Терапия согласно протоколу NB-2004 является эффективной и показывает высокую ОВ в низкой и промежуточной группе риска. ОВ в высокой группе риска – 43%, что требует оптимизации диагностики, разработки новых подходов терапии пациентов данной группы.
Ключевые слова: нейробластома, общая выживаемость, злокачественное новообразование.

НЕСПЕЦИФИЧЕСКИЙ АОРТОАРТЕРИИТ У ДЕТЕЙ: ПРОБЛЕМЫ ПОЗДНЕЙ ДИАГНОСТИКИ И ЛЕЧЕНИЯ.

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РЕЗЮМЕ

Проведен ретроспективный анализ историй болезни 11 детей с неспецифическим аортоартериитом, проходивших обследование и лечение в НЦПДХ в 2010-2020 годы. Анализировали возраст в дебюте, продолжительность болезни на момент исследования, длительность активной фазы, распространенность поражения аорты и ее ветвей, эффективность базисной терапии (БТ) и исходы. Срок постановки диагноза от начала заболевания: от 6-11 мес- 4 (36,4%), >12 мес - 7 (63,6%). По локализации: I тип- 9%, IIa-9%, IIb-9%, III-36%, IV-18%, V-18%. В БТ: метипред (стартовые дозы 1,0-1,5, поддерживающие-0,5-0,3 мг/кг/сут)+ методжект (15-10мг/м^2/нед)-10детей (90,9%) и 1 (9,1%)-в сочетании с циклофосфамидом (пульс-терапия 500 мг/м^2 х 1 раз/мес 6 мес). В 1 случае оперативное лечение (имплантация стент-графта в брюшной отдел аорты и нефрэктомия справа).
Результаты и обсуждение. Дети были в тяжелом (9-81,8%) и в крайне тяжелом (2-18,2%) состоянии. Острая фаза отмечалась у 3 (27,3%) и у одного из них артериальная гипертензия (АГ)-200/140 мм.рт.ст. У 2 девочек - вторичная дилатационная кардиомиопатия. Чаще наблюдался III тип-36%. Терапия была не эффективна у 27,3% детей в связи с критической окклюзией брюшного, грудного отделов аорты с вторичным сморщиванием почек с потерей функции и злокачественной АГ. Т.о., у детей с НАА выявлены выраженный стеноз/окклюзия аорты и ее ветвей, что свидетельствовало о крайне поздней его диагностике.
Неспецифический аортоартериит (НАА) в детском возрасте относится к редко встречающимся заболеваниям, что становится причиной поздней диагностики, инвалидизации и летального исхода [1-3] Цель: анализ своевременности диагностики неспецифического аортоартериита у детей с оценкой эффективности терапии и исхода.
Материалы и методы. Проведен ретроспективный анализ историй болезни детей с НАА (11), проходивших обследование и лечение в НЦПДХ в 2010-2020 годы. Возраст 3-17 лет. Девочек-8 (72,7%), мальчиков-3 (27,3%),

соотношение~3:1. Анализировали возраст в дебюте, продолжительность болезни на момент исследования, длительность активной фазы, распространенность поражения аорты и ее ветвей, эффективность базисной терапии (БТ) и исходы. Срок постановки диагноза от начала заболевания: >6 мес- 4 (36,4%), >12 мес - 7 (63,6%). По локализации: I тип- 1 (9,1%), IIa-1 (9,1%), IIb-1 (9,1%), III-4 (36,4%), IV- 2 (18,2%), V-2 (18,2%). В БТ: метипред (стартовые дозы 1,0-1,5, поддерживающие-0,5-0,3 мг/кг/сут)+ методжект (15-10мг/м^2/нед)-10детей (90,9%) и 1 (9,1%)-в сочетании с циклофосфамидом (пульс-терапия 500 мг/м^2 х 1 раз/мес 6 мес). В 1 случае оперативное лечение (имплантация стент-графта в брюшной отдел аорты и нефрэктомия справа).

Результаты и обсуждение. Дети были в тяжелом (9-81,8%) и в крайне тяжелом (2-18,2%) состоянии. Острая фаза отмечалась у 3 (27,3%) и у одного из них артериальная гипертензия (АГ)-200/140 мм.рт.ст. У 2 девочек - вторичная дилатационная кардиомиопатия. Чаще наблюдался III тип (36,4%). Терапия не эффективна у 27,3% детей с летальным исходом в связи с критической окклюзией брюшного, грудного отделов аорты с вторичным сморщиванием почек с потерей функции и злокачественной АГ..

ВЫВОД

У детей с неспецифическим аортоартериитом выявлены выраженный стеноз/окклюзия аорты и ее ветвей, что свидетельствовало о крайне поздней его диагностике

ДВОЙНЫЕ РАЗРЫВЫ НИТЕЙ ДНКА И РАК ЖЕЛУДКА

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[3]Отделение научно-аналитической работы Западно-Казахстанский Медицинский Университет имени М. Оспанова, Казахстан.

Актуальность: Рак желудка во всем мире занимает 4 место по заболеваемости и 2 место по смертности [1], что предостовляеть сабой одно из немаловажных социальных проблем общества.

РЖ это сложное заболевание, возникающее в результате взаимодействия факторов окружающей среды и хозяина, основными факторами, способствующими высокой смертности РЖ, включают его молчаливый характер течения, поздние клинические проявления и лежащую в основе биологическую и генетическую гетерогенность. Учитывая молчаливый и агрессивный характер РЖ, зачастую пациенты обращаются за медицинской помощью в запушенных стадиях. Современная наука, имея возможность изучат основу молекулярной- генетической особенностей онкологической патологии требует поиск и внедрения новых персонифицированных методик диагностики и мониторинга при лечениях онкологических заболеваний.

Фосфорилирование гистона H2AX на остатках Серина IY с конечной точки Карбоксила (который производит γH2AX) является чувствительным маркером для репарации двунитевых разрывов (ДР) ДНК. Двунитевые разрывы ДНК являются серьезным поражением, которое может инициировать геномную нестабильность, что в конечном итоге приводит к раку[2,3]

Неудивительно, что клеточная геномная целостность тщательно контролируется процессами, которые обнаруживают и восстанавливают двунитевые разрывы, а также останавливают прогрессию клеточного цикла до завершения восстановления [4] Заболевания человека с дефектами этих процессов часто проявляют предрасположенность к раку [5]. Ключевой компонент в восстановлении ДНК протеин гистона H2AX, который быстро становится фосфорилированным на остатках Серина IY от карбоксильной конечной точки (конечной точки Карбоксила) (Серина с- IY) для того чтобы сформировать γH2AX на возникающих местах ДР. В течение 30 минут после образования ДР большое количество молекул γH2AX образуется в хроматине вокруг места разрыва, образуя фокус, где накапливаются белки, участвующие в восстановление ДНК и накоплении ремоделировании хроматина[6] Эта амплификация (усиление) дает возможность обнаружить индивидуальное ДР с антителом к γH2AX.

Поскольку ДР способствуют как геномной нестабильности, так и лечению рака, мониторинг их образования в клетке путем обнаружения образования фокуса γH2AX может быть чувствительным средством для мониторинга прогрессирования рака и лечения[7].

Цель исследования: Изучение разрыва двух нитевых цепочек днка методом γH2AX на аппарате AKLIDES®.

Материалы и методы: Пилотный проект. Поперечное исследования случай контроль. Случайная выборка.

Пациенты с верифицированным диагнозом РЖ (N24), в контрольную группу участники у которых отсутствует диагноз РЖ(N 22).Средней возраст пациентов с РЖ составил 56,04[52,50:59,58], В контрольной группе 56,21 [52,42:60]. Все пациенты в первые выявленные с патоморфологический подтвержденным диагнозом РЖ, любой стадией, еще не получившие лечение со стороны онкологического профиля. В контрольную группу вошли условно здоровые люди.
Исследование проводилось в период с июля 2018 года по декабря 2019 года в МЦ ЗКМУ имени Марата Оспанова. Метод оценки репарации двунитевых разрывов ДНК в лимфоцитах крови, непрямым иммунофлюоросцентным анализом при помощи системы gH2AX foci на аппарате AKLIDES®(Germany/Medipan).
Результаты и их обсуждение. Статистически значимые различия обнаружены у пациентов с рж в количестве разрывов двух цепочных разрывов ДНА (p=0,01),причем, следует отметить диаметр разрывов различается у пациентов с раком желудка намного больше (p=0,04).Кластерная агрегация двунитевых разрывов дна имеет также различия (p=0,03). В остальных клеточных параметрах статистический значимые различия не выявлены.
На основании таблицы №1 можно сделать вывод о том, что различий по Количество ядер с очагами, апопоптических клетках, позитивно окрашенные foci клетоках практически не наблюдается. **Заключение:** Двунитевые разрывы ДНК являются основной причиной геномной нестабильности что последующим вызывает процесс рака. Исследования двунитевых разрывов ДНК при помощи системы gH2AX foci на аппарате AKLIDES® требует дальнейшего углубленного изучения, так как определения степени индуциирования Двунитевых разрывов может помочь при мониторинге эффективности лечени против рака.

MEDICAL SUPPORT IN THE SAFETY SYSTEM OF NAVIGATION OF THE MODERN CIVIL MARINE

Sanuber Hajizade

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Modernization of long-distance vessels, a decrease in the number of crews of ships, an increase in psycho-emotional stress, insufficient monitoring of compliance with safety and industrial hygiene requirements in the context of the transformation of the socio-economic way of life and the commercialization of the merchant marine fleet contribute to a decrease in the safety

of navigation and an increase in the risk of consequences of adverse shifts in the health of seafarers long voyage. Studies have established that the specific conditions of long-term sailing contribute to the emergence and development of a wide range of neuropsychic and psychosomatic disorders, which is directly related to the causes of accidents at sea, the transition of highly qualified specialists to coastal work and the occurrence of severe chronic diseases in sailors. The variety and complexity of working conditions on long-distance vessels dictates the need to develop preventive and rehabilitative measures, taking into account the specifics of various types of work in the sea fleet. But until now, the scientific principles of preventive measures have not been formulated, requiring a systematic approach to protecting the health of the ship's personnel with the setting of specific and specific tasks in each period of production activity: on the shore and at sea.
In connection with the search for the necessary modernization of the prophylactic medical examination system for long distance sailors, the transformation of the entire medical service, the development of constructive measures and proposals for their implementation in the new economic conditions are in practice one of the urgent problems of ensuring the safety of navigation, which requires its scientific justification.
The urgent need to preserve and strengthen the health of seafarers, as the main element of ensuring the safety of life of ships, determined the choice of the goal and objectives of this study.
The purpose of the study was to substantiate and scientifically develop a system of medical and organizational measures as factors contributing to an increase in the safety of life of ship ships of the transport fleet.
The objective of the study was to analyze the international requirements for ensuring the safety of life of ships related to the health of seafarers; to present the general principles of the professional suitability of seafarers related to their health and the organization of dispensary observation of seafarers as one of the most important elements of maintaining the safety of life of long-distance vessels; to study domestic and foreign experience in creating information technologies for organizing medical examination and assessing the quality of medical and preventive care for seafarers of long voyages; analyze the results and quality of preventive medical examinations of seafarers of long-distance voyages in order to

determine the degree of their readiness to perform professional functions and outline ways to improve them; to assess the volume and quality of medical examination of seafarers of long-distance navigation; to develop a concept for increasing the efficiency of prophylactic medical examination of seafarers in the context of reforming the health care system of seafarers; to develop and test a comprehensive system of measures to ensure the prevention of violations of the safety of life of ships associated with deteriorating health and reduced working capacity of seafarers.
A literature review was carried out, a plan was drawn up and a program was developed, a medical-sociological, statistical and expert study was carried out (90% contribution). The collection of scientific information was personally carried out by copying data from primary medical and regulatory documents and a questionnaire survey of cadets and seafarers of long distance navigation (95% contribution), its analysis was carried out (95% contribution).
The scientific novelty of the research lies in the fact that for the first time, from the standpoint of system analysis, a comprehensive analysis of the state of medical examination and medical support as factors of the life safety of long-range vessels has been carried out. On the basis of new methodological approaches with carrying out a differentiated clinical examination of seafarers of long voyages (anamnestic questionnaire survey of seafarers and the unification of commissions for medical examination of seafarers with a single computer connection), the main directions of improving the medical examination of seafarers in modern socio-economic conditions (the continuity of all links involved in the process of medical examination of seafarers: ship medical personnel, persons responsible for providing first aid and caring for the sick and injured, specialists of the commissions for medical examination of the ship's personnel and district medical centers).
The data based on the research results can become the basis for improving the sectoral preventive medical service in the regions of Azerbaijan, planning outpatient and inpatient care, the professional activities of ship doctors and those responsible for medical support.

PRIMARY PRODUCT OF PHYTOPLANKTON IN RESERVOIRS OF AZERBAIJAN AND THE DESTRUCTION OF COMMON ORGANIC MATTER.

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The purpose of the study. This article is characterized by features of the vegetation and the main representatives of the participants of production-destruction processes, which are the phytoplankton and microbiota in reservoirs located in different climatic zones. Substantiation of the formation of biological productivity by determining the amount of total organic matter destroyed by the primary product synthesized by phytoplankton in the process of photosynthesis in reservoirs.
Research materials and methods. Water and silt samples for microbiological research were conducted in the Agstafachay reservoir in 2013 by seasons. Samples in the river were taken from 3 main points - in the territory of Dilijan (A), Krasnoselsk (B) and Ijevan (V) regions of Armenia, and in the reservoir - from 5 stations-places. All samples were taken in accordance with aseptic rules - water YI Sorokin batometry and silt-soil with a sterile spatula (in the river), a small QOIN pipe (in the

reservoir). Preliminary microbiological analysis was carried out no later than 2 hours after sampling (field-expedition conditions and inpatient-laboratory).
The results of the study. It should be noted that after the creation of reservoirs, initially large amounts of organic matter, biogenic elements in the floodplains enrich the environment, and a real threat to the development of hydrobionts in the basins arises due to the activity of sulfating bacteria. This produces hydrogen sulfide gas (H2S), which is considered an intermediate product, and this gas causes a massacre like a sharp poison.
The end. The formation of biological productivity was justified by determining the amount of total organic matter destroyed by the primary product synthesized by phytoplankton in the process of photosynthesis in reservoirs. **Keywords:** Saprophytic bacteria, physiological groups, speed saprophytes, anthropogenic eutrophication, hypoxia.

THE BASICS OF AZERBAIJAN ECOLOGICAL HAZARD POSSIBLE CAUSES OF KURA RİVER

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Abstract

Caucasus territories with less water-which is located in the area of south - east 70% of the water are balancing of river water is flowing outside and 64% of this applies to the Kura - Aras basin. At the same time it is known that each 2 rivers belong to five states (Turkey, Iran, Armenia, Georgia and Azerbaijan) which are always continuously exposed to anthropogenic impacts. The last 60 years (in 1956) the complex character monitoring shown that the upper part of the every 2 river (mainly Turkey), the mountainous terrain are not polluted by the population and industry and self-purification processes realized neutralization the waste of local alloxtons. Both rivers which are going through the territory of neighboring states (Aras to Armenia, Kura to Georgia) are stable condition on ecological and saprophyte side.
Keywords: Sanitary-hydrobiology, duct-enterobakter, mezotrof, oliqosaprob, destruction, alloxton.

Introduction. It is known that, 64% of Azerbaijan's water balance, which is located in the drought-stricken area in the south east of the Caucasus, is the waters of the Kura river flowing outside. At the same time, it is also known that the Kura river basin is always subject to anthropogenic influences because it is related to the land of five states (Turkey, Iran, Armenia, Georgia and Azerbaijan). A complicated character with a monitoring focus over the last 60 years (from 1956) has been understood from planned researches, as the upper part of the Kura river (especially in Turkey) is mountainous terrain, which is sharp and constantly contested by the population and industrial areas. At the same time, it has been found that local pollution from the short-to-small field of river is neutralized through self-cleaning processes, and the Kura river is in an environmentally stable state in the neighboring state (Georgia).
Conclusion. It has been understood from the results of the microbiological studies that the Kura river has reached to the beginning in a planned way for the last 50 years in all the ages and chapters, the Upper Kura river in Turkey is stable in terms of environment, health and hydrobiology. In the settlement areas such as Gole and Ardahan, local, short-range pollution of waters passes by livestock associations in the summer and the previous environmental steady state of the water is restored through self-cleaning processes at 12-18 km. The continuous pollution of the Kura river has been continuing for 400 km in the territory of Georgia, and it becomes sharp in terms of space-time. Pollutants of the main alloxton character, anthropogenic origin, polluted at the polisaprob, cannot neutralize the self-cleaning process polydutants, which are regarded as natural resistance in the Kura water. Organic pollution has created optimal conditions for the development of pathogenic microbiota and parasitic diseases in the water.

MEDICAL SUPPORT IN THE SAFETY SYSTEM OF NAVIGATION OF THE MODERN CIVIL MARINE

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Modernization of long-distance vessels, a decrease in the number of crews of ships, an increase in psycho-emotional stress, insufficient monitoring of compliance with safety and industrial hygiene requirements in the context of the transformation of the socio-economic way of life and the commercialization of the merchant marine fleet contribute to a decrease in the safety of navigation and an increase in the risk of consequences of adverse shifts in the health of seafarers long voyage. Studies have established that the specific conditions of long-term sailing contribute to the emergence and development of a wide range of neuropsychic and psychosomatic disorders, which is directly related to the causes of accidents at sea, the transition of highly qualified specialists to coastal work and the occurrence of severe chronic diseases in sailors. The variety and complexity of working conditions on long-distance vessels dictates the need to develop preventive and rehabilitative measures, taking into account the specifics of various types of work in the sea fleet. But until now, the scientific principles of preventive measures have not been formulated, requiring a systematic approach to protecting the health of the ship's personnel with the setting of specific and specific tasks in each period of production activity: on the shore and at sea.
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The objective of the study was to analyze the international requirements for ensuring the safety of life of ships related to the health of seafarers; to present the general principles of the professional suitability of seafarers related to their health and the organization of dispensary observation of seafarers as one of the most important elements of maintaining the safety of life of long-distance vessels; to study domestic and foreign experience in creating information technologies for organizing medical examination and assessing the quality of medical and preventive care for seafarers of long voyages; analyze the results and quality of preventive medical examinations of seafarers of long-distance voyages in order to determine the degree of their readiness to perform professional functions and outline ways to improve them; to assess the volume and quality of medical examination of seafarers of long-distance navigation; to develop a concept for increasing the efficiency of prophylactic medical examination of seafarers in the context of reforming the health care system of seafarers; to develop and test a comprehensive system of measures to ensure the prevention of violations of the safety of life of ships associated with deteriorating health and reduced working capacity of seafarers.
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LIST OF PARTICIPANTS OF CONFERENCE

The Second International Scientific – Practical Virtual Conference “Modern Medicine: Problems, Prognoses and Solutions."

Date: 19.00 -22.00, 18.12.2020-20.12.2020

No	Full name	Scientific degree	Workplace
1	Aytakin Hasanova	Phd in Medical biology	Azerbaijan M
2	Gülgün Məmmədli	Student	Yoxdur
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26	Məmmədova Aygün	həkim	10 saylı uşac

27	Sarıyeva Ellada	həkim	ATU Tədris C
28	Əzizova Məhbubə	Tİbb üzrə fəlsəfə doktoru	Azərbaycan T
29	Mürsəliyeva Aytən	həkim	Ə.F.Qarayev Kliniki uşaq
30	Əsədova Sona	həkim	2 sayli qadin

31	Əliyeva Tahirə	Pediatr neonatoloq	Respublika P
32	Hacıyeva İlahə	həkim	19 saylı uşac
33	Melis Gönülal -dermatolog-İzmir		
34	Təranə Kazımova	həkim	23 sayli birle xestexanasın
35	Bəşirova Kəmalə	Terapevt	6 saylı Təcili Stansiyası
36	Qurbanova Gultekin	həkim	21 saylı uşac
37	Lamiyə Həsənova	həkim	21 saylı uşac
38	Əmircanov Elistan	həkim	19 saylı BŞX
39	Abbasova Şahanə	Həkim	Azevromed k
40	Askerova Nermine	həkim	1 nomreli özə
41	Səfurə Əliyeva	həkim	16 saylı uşac

42	Şükürova Leyla	həkim	Sağlam Gele
43	Səfərova Shehla	həkim	7 saylı doğur
44	Abbasova Şahanə	həkim	həkim
45	Hacıhəsənli Ülkər	həkim	1 saylı Sumq
46	Xuraman Elibeyli	həkim	BMP- Medilu
47	Zeynab Hüseynova	həkim	Şamama Ələ saylı doğum
48	Əmrahova Kamalə	həkim	MODERN SC
49	Siraclı Ülviyye	Tibb üzre felsefe doktoru	ATU TCK 2 mama-ginek kafedrası.
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52	Arif Abdullayev	Həkim	Respublik
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59	Kerimova Ramida	Hekim	15 nomreli B
60	Əliyeva Yeganə	həkim	24 BŞX
61	**Afet Ərebova**	**həkim**	**Aile p mesl**
62	Melikova Ulviyye	Tibbi uzre felsefe doktoru	3 sayli SKX c
63	Hacızadə Aytəkin	Əziz Əliyev adına ADHTİ-nun disertantı	Respublika K Xəstəxanası şöbəsi
64	Əliyeva Liana	Ailə həkimi	Novxanı həki
65	Abdullayeva Ruxsare	hekim	20 sayli polik
66	Əsədov Qalıb	hekim	Turan klinika
67	Axundova Natəvan	Dosent	ATU TCK
68	Aydan Hüseynli	hekim	Sağlam gələ
69	Babayeva Gülnar	Tibb uzre felsefe doktoru.	ATU TCK II m ginekologiya
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71	Ceferova Sebine	Tibb uzre felsefe doktoru.	ATU usaq xe
72	Catcalava Aybəniz	həkim	23 BŞX
73	Abbasova Sebina	həkim	Sumqayit şəh uşaq poliklin
74	Aytekin Hesenzade	həkim	Turan klinika
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78	Talıbov Arzuman	həkim	Tugay Pharm
79	Xudiyeva Ayna	hekim	Sumqayıt şəh uşaq poliklin
80	Baxışova Mehparə	hekim	16 nömrəli us
81	Farid Masmaliyev	Biologiya uzre felsefe doktoru	1 sayli Baki s zohrevi dispa
82	Hacıyeva Nərgiz	Tibb üzrə fəlsəfə doktoru.Dosent	ATU II USAG XESTELIKLE KAFEDRASI
83	Əliyeva Aygül	Həkim	Sağlam Gələ
84	Günel Hüseynova	hekim	Siyəzən Müa Diaqnostika
85	Əliyeva Yeganə	hekim	10 sayli qadi

86	Əlişova Nüşabə	Tibb üzrə fəlsəfə doktoru	Tibb üzrə fəls
87	Həsənova Rahilə	Həkim	23 saylı BŞX

88	Əliyev Elnur	hekim	Silahli Quvve Kliniki Hospi
89	Quliyeva Nusabe	hekim	4sayli uşaq p
90	Quvalov Rəşad	Uzman Doktor	Mərkəzi Klini
91	Eliyeva Terane	hekim	12 saylı uşac
92	Kərimova Dürdanə	hüekim	1 Saylı qadın
93	Quliyeva Nusabe	hekim	4 saylı uşaq
94	Sadiq Rzayev	hekim	hekim
95	Xudiyev Elmir	hekim	Bakı Dəmiryo
96	Tagiyeva Afag	Tibb elmleri namizedi.	Azerbaycan T Universiteti T klinika
97	Əliyeva Ləman	hekim	Caspian Inte
98	Əliyeva Nigar	hekim	Saglam gele
99	Əhmədova Gulnar	hekim	9 sayli usaq

100	Məmmədova Mehriban	hekim	26 saylı polik
101	Əkbərova Əfsanə	hekim	2 saylı Uşaq
102	Rzayeva Gülər	hekim	Merkezi neft
103	Tağıyeva Aybəniz	hekim	19 saylı uşa
104	Quliyeva Yulduz	hekim	German hos
105	Zalxa Osmanova	hekim	3 sayli Surax
106	Resulov Teymuraz	hekim	Zeferan klini
107	Quliyeva Arzu	hekim	hekim
108	Kərimova İlhamə	hekim	ATU TCK II Mamaliq-Gin
109	Mürsəliyeva Aytən	Həkim	Ə.F.Qarayev Kliniki uşaq
110	Həsənova Kamalə	Həkim-pediatr	21 BŞX
111	İlhamə hətəmova	Hekim	Mediland hos
112	Nesibova Ilqare	hekim	Qobu qesebe
113	Naghiyeva Ellada	Həkim	Euromed tibb

114	Memmedova Esmer	Həkim	22 saylı sehe
115	Sevil Qənbərova	Assistent	Azərbaycan T II Uşaq Xəst

116	Mikayilzade Samire	Həkim	20 sayli sheh
117	Nezerova Seriyye	Həkim	Suraxani 3 sa evinin Qadin meslehetxan
118	Memmedova Xanımqız	Həkim	Turan klinika
119	Naibə Həsənova	hekim	Real hospital
120	Yəhyabəyova Bəsti	hekim	Qaradag rayo 23- saylı BŞX
121	Ələsgərova Aynurə	hekim	16 saylı uşac
122	Mahmudova Nüşabe	hekim	Sumqayıt 2N
123	Səbinə Məşədiyeva	TİBB ELMLƏRİ NAMİZƏDİ	ATU Tədris-T Klinikasının Şöbəsinin Mu
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126	Eynalova Mehriban	Pediatr	Tədris Terapə
127	Eyvazova Günel	Pediatr.	Sumqayıt 5 u

128	Fəhradova Kəmalə	Pediatr	1 saylı uşaq
129	Novruzova Elnure Memiş qizi	Hekim-endokrinoloq	3 sayli S po
130	Aygun Qazıyeva	Plastik cərrah	Zəfəran hosp
131	Azər Əbilzadə	Plastik Cerrah	LOR hospital
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135	Şirinova Arzu	Mama ginekoloq	23 BŞX
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