ABSTRACT BOOK

INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE, DEDICATED TO THE WORLD HEALTH DAY 2021

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Congratulations from the Rector of Bogomolets National Medical University to the participants of the Scientific and Practical Conference with international participation dedicated to the World Health Day 2021.

Dear conference participants,

On behalf of the staff of one of the oldest higher educational institutions in Ukraine, I sincerely congratulate you on the celebration of the 2021 World Health Day in the framework of the International Scientific and Practical Forum on this occasion!

Bogomolets National Medical University, together with the entire international community, always participates in the celebration of important events of the WHO, one of which is World Health Day. Every year, the University organizes events for this important event, which since 2007 have been held in the format of international scientific and practical conferences. The purpose of such events is to attract the attention of scientists, health practitioners, politicians, publicity, other involved structures to the most important health problems and comprehensively consider approaches to their solution.

We are proud that in different years, active participants in the international conferences held at the University were representatives of the WHO Regional Office for Europe, including the current Regional Director Hans Henri P. Kluge, advisers of WHO/Europe Gerald Rockenschaub, Agis Tsuros, Halyna Perfileva, Kees de Joncheere, representatives of the WHO Office in Ukraine Igor Pokanevych, Dorit Nitsan, Roberto Gnezotto.

It is extremely important that the consideration of priority issues of public health takes place in a powerful scientific and expert environment, with the participation of representatives of well-known scientific schools, practical healthcare, management and legislative structures, professional associations and public associations within the framework of an intersectoral and multidisciplinary approach.

Such an integrated approach is due to the complexity and scale of existing health problems and the emergence of new, previously unknown ones that require consolidation of the efforts of the international community. After all, the global threats to public health caused by the epidemic of noncommunicable diseases, drug resistance, aging, migration and urbanization, widening health inequalities, environmental degradation and climate change were supplemented in 2020 by the COVID-19 pandemic, which jeopardized progress in the fight against diseases and the achievement of the Sustainable Development Goals on health.

The search for ways to resist global health threats in the XXI century brings together the desire of health professionals, scientists, teachers, health managers from around the world to promote global solidarity in the interests of health security, availability of medicines and vaccines, including against COVID-19, strengthening national health systems, ensuring their readiness for pandemics and other health emergencies, improving health indicators, upgrading the quality and availability of health care, and overcoming health inequalities and so on.

For this reason, the conference program provides consideration of a wide range of topics, with the participation of scientists and practitioners of various specialties, including epidemiologists, infectious disease specialists, public health specialists, managers, general practice/family medicine experts, pediatricians, gerontologists, pharmacologists, social workers, representatives of patient organizations, etc.

Discussion of various health problems in the context of WHO-recommended strategies will strengthen the evidence base, justify perspective ways to solve them.

The 2021 World Health Day Conference is a testament of our contribution to addressing priority public health issues together, taking into account current trends and effective threat countering mechanisms.

I am confident that the coverage of new scientific achievements, constructive discussions and open dialogue, a partnership approach to solving current public health problems will contribute to the improvement of strategies to combat the causes of disease, improve areas and measures to preserve and promote health, achieve universal health care coverage and efficiency of medical care, the formation of a favorable environment for health, improving the quality of life.

I wish the participants of the conference successful work, generation of new ideas in the context of solving current health problems!

Rector of Bogomolets National
Medical University,
Professor

Iurii Kuchyn

Greetings from the President of the National Academy of Medical Sciences of Ukraine, Academician of the National Academy of Medical Sciences of Ukraine, Corresponding Member of the National Academy of Sciences of Ukraine, Professor V. I. Tsymbaliuk to the participants of the International Scientific and Practical Conference dedicated to the World Health Day 2021.

Dear conference participants, scientists, educators, healthcare professionals, and students!

I congratulate you on the occasion of World Health Day and the start of the traditional annual International Scientific and Practical conference on this extraordinary date!

The organization of such a forum in the leading higher medical educational institution of the country together with the National Academy of Medical Sciences of Ukraine indicates the priority attention of the scientific and educational community to the issues of public health and well-being, with a special emphasis on measures to counter global threats and emergencies in healthcare, primarily the COVID-19 pandemic.

The combination of our efforts towards the integration of academic and university science creates a reliable platform for a consolidated approach in the fight against modern challenges and threats to public health with the broad participation of managerial, legislative, educational, information and educational links, representatives of all involved sectors of society.

The high need to consolidate measures for countering the global burden of diseases is due to the current epidemiological landscape of morbidity, a complex set of interrelated health determinants, and the destructive impact of pandemic manifestations on national health systems. This creates a high need for new professional knowledge, approaches, strategies, partnerships that will contribute to the adaptation of health services to the challenges of the XXI century; the overall coverage of the population with high-quality medical services.

WHO has identified 10 global health issues to track in 2021, which relate to strengthening solidarity for health safety; accelerating access to tests, medicines and vaccines against COVID-19; improving health by bringing services closer to the population; reducing health inequalities; combating infectious and noncommunicable diseases, with antimicrobial resistance; preventing mental health disorders, accelerating effective recovery from a pandemic; implementing global leadership in research and data collection.

The success of solving the priority problems of health care lies in the plane of close interdisciplinary, intersectoral, international cooperation, which is demonstrated by this scientific forum.

Its program provides consideration of a wide range of scientific and practical issues, including trends in population health; activities and resource provision of health care systems; creation of e-health; development of public health services; modern technologies of treatment and prevention of diseases, medical and legal regulation, psychological aspects of health, etc. This choice is natural given the multidimensionality of health in today's changing world and the obstacles to meeting the medical and social needs of different segments of the population.

Consideration of the conference, critical assessment of the situation, identification of priority ways to prevent and reduce obstacles to ensuring a high level of health and well-being of the population is an extremely important step in implementing the forum's goals and setting new goals for future research.

It is extremely gratifying that the leading academic institutions take an active part in holding such a scientific and practical event and actively cover the achievements of domestic academic science.

I am confident that the active communication of scientists, organizers and health professionals and other areas involved in this forum will offer promising solutions, expand professional contacts, increase the number of partners, launch and implement new initiatives in the future.

I wish all the participants of the International Scientific and Practical Conference dedicated to the 2021 World Health Day inspiration, productive creative work, fruitful discussion and significant results.

President of the NAMS of Ukraine,
Academician of the NAMS of Ukraine,
Corresponding Member of the NAS of Ukraine,
Professor

Vitalii Tsymbaliuk

THE EFFECT OF NICOTINE ON THE FORMATION OF CHRONIC GASTRODUODENAL PATHOLOGY IN TEENAGER

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Introduction: Worldwide, about 7 million people die annually from diseases caused by smoking, in Ukraine - 85 thousand people, which is about 12% of total mortality. According to statistics, about 8.2 million adult Ukrainians smoke and 25.5% are teenagers. A quarter of teenagers smoke only 1-2 times a month, while 29.0% of boys and 16.3% of girls can be classified as daily smokers. Smoking is a risk factor for many diseases, namely diseases of the respiratory system, cardiovascular system, gastrointestinal tract, oncological pathology of various localization, osteoporosis. Passive smoking of a child at an early age causes the emergence of chronic respiratory pathology, due to a violation of the local immune protection and the manifestation of allergic pathology. It should be noted that during smoking more than a thousand chemical compounds enter the body, 196 of which are toxic, 14 - narcotic, more than 50 - carcinogenic, which have both direct and indirect negative effects on organs and tissues and the body as a whole.
The aim: To establish the effect of nicotine on the formation of chronic gastroduodenal pathology (CGDP) in adolescents.
Materials and methods: We observed 136 teenagers aged 12-17 years with verified CGDP. All patients underwent a study of urinary cotinine (an active metabolite of nicotine) to identify active smokers. To verify CGDP, all adolescents underwent esophagogastroduodenoscopy (EGDS) with targeted biopsy of the gastric mucosa membrane (MM) and MM of the duodenum for further morphological and immunohistochemical examination. The level of acidic and neutral mucopolysaccharides, prostaglandin E was determined by immunohistochemical examination.
Results: The analysis of the obtained results showed that 44.1 ± 4.3% of adolescents actively smoke. CGDP in adolescent smokers was characterized by a prolonged course and a high recurrence rate. Dull abdominal pain and heartburn prevailed among the complaints. According to the results of EGDS, most of them were diagnosed destructive changes of the stomach and duodenum MM against the background of a decrease in acid-forming gastric function and disorders of motility of the stomach. In a histological examination 63.6±14.5% of active smokers were diagnosed with H. pylori infection against the background of a pronounced degree of inflammation of the stomach MM and microcirculatory disorders in the form of hemorrhages and microthrombosis. In 72.7 ± 13.4% of adolescent smokers there was a violation of the cytoprotective function of the mucosa membrane, namely decrease in the level of production of neutral mucopolysaccharides and prostaglandin E2.
Conclusions: Thus, studies confirm the effect of nicotine on the formation of CGDP in adolescents. The microcirculatory disorders established by us against the background of the expressed inflammation of mucosa membrane of stomach and duodenum contribute to the development of disorders of preepithelial and epithelial protective barrier of the MM of organs of a gastroduodenal zone. Insufficient blood supply against the background of a reduced production of cytoprotective factors of the mucosa membrane of the stomach and duodenum deepens the inflammatory process and leads to a recurrent course of CGDP in children.

KEY WORDS: smoking, microcirculatory disorders, inflammation

ETHICAL AND LEGAL PRINCIPLES OF PROVIDING MEDICAL CARE TO CITIZENS ON THE TERRITORY OF UKRAINE

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Introduction: In Ukraine, experts point to the very low level of implementation and protection of human rights in the field of health care. This situation is mainly due to lack of legal awareness and legal culture. Namely, in order to skillfully use their rights, patients need to know them. Professor S.G. Stetsenko, a well-known specialist in the field of medical law, considering the general structure of medical activity, called the relations that arise in various areas of health care, medical relations.
The aim: The aim of this study was to identify the legal and ethical principles of providing medical care to citizens in Ukraine.
Materials and methods: To achieve this goal, a formal legal method was used, which refers to special scientific methods. All citizens of the state are well aware that the Constitution of Ukraine guarantees everyone the right to health care, which is ensured by systematic activities of state and other organizations. This is stated in Article 283 of the Civil Code of Ukraine and Article 6 of the Fundamentals of the legislation of Ukraine on health care (hereinafter «Fundamentals»). Foreigners or stateless people who are legally staying on the territory of Ukraine have the same right, because patients' rights have no borders.
But quite few people know about Article 10 of the Fundamentals, which states that in accordance with the requirements, citizens of Ukraine are obliged to take care of their health and the health of children, not to harm the health of other citizens; to undergo preventive medical checkups and vaccinations in cases provided by law; to provide emergency care to other citizens who are in a life-threatening condition.
The following rights of patients, which are specified in the following articles of the Fundamentals, are most often applied in practice. According to the first part of Article 34 and Article 38, a patient has the right to freely choose a doctor and to choose methods of treatment, as well as the right to demand a change of doctor. Article 35 stipulates that primary medical and preventive care is provided mainly on a territorial basis. The right to receive reliable and full information about the state of one's health is regulated by Article

39 of the Fundamentals and Article 285 of the Civil Code of Ukraine. The right to secrecy about one's health, about the fact of seeking medical help, about the diagnosis, as well as about the information obtained during the medical checkup is confirmed by Article 391 of the Fundamentals and Article 286 of the Civil Code. Secrecy of health condition refers to personal data protected by law (according to Article 23 of the Law of Ukraine «On Information»).

Results: As a result of the analysis, there were defined articles of the Fundamentals and the Civil Code of Ukraine, which guarantee the protection of the rights of citizens of our state and those foreigners who are legally staying on its territory, as well as the legislation ensuring ethical relations between doctor and patient.

Conclusions: After studying the above rights of patients, which are most often used in practice, we can draw the following conclusions:

- citizens of Ukraine and foreigners, legally living on the territory, have the right to health care and are protected by the Constitution of Ukraine and the law through the systematic activities of state organizations that organize comprehensive interaction of medical institutions;
- the state regulates the observance of ethical norms of the relationship between doctor and patient on the basis of the above mentioned articles of the legislation of Ukraine;
- the patient can be sure of the confidentiality not only of the diagnosis, but also of the fact of consulting a doctor, which to some extent is a guarantee of a person's right to privacy.

KEY WORDS: legislation, patient, foreigner, confidentiality.

CHARACTERISTICS OF CHANGES IN MALIGNANT TUMORS OF THE LARYNX, TRACHEA, BRONCHI AND LUNGS IN THE TRANSCARPATHIAN REGION

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Introduction: Ensuring the main strategic task of the health care system to provide the population with affordable and quality medical care, development and implementation of preventive measures, effective forms and methods of specialized and highly specialized services is impossible without knowledge of basic indicators, trends and patterns of public health.

The aim: Study and analysis of the dynamics of malignant neoplasms of the latynx, trachea, bronchi and lungs at the regional level.

Materials and methods: The data of the state statistical reporting (forms №7, №35-healthy) and the database of the National Cancer Registry were analyzed.

Results: The incidence of laryngeal oncopathology during the study period decreased by 13.81%, while the level of malignant neoplasms of the trachea, bronchi and lungs increased by 23.80%.

The proportion of MN of the trachea, bronchi and lungs in the structure of MN of the respiratory organs exceeds the proportion of MN of the larynx. The proportion of cases of tracheal, bronchial and lung cancer increased by 17.15% during the study period, but the proportion of cases of laryngeal cancer decreased by 19.47%.

Among patients with a newly diagnosed malignant neoplasm of the larynx, the disease is most often detectable at stage III (from 44.68% in 2018 to 71.43% in 2015), while for malignant tumors of the trachea, bronchi and lungs place are most often detectable at stage IV and their quotient ranges from 39.89% in 2016 to 56.31% in 2018.

5-year survival of laryngeal cancer in 2015 was 1.56 ‰, and in 2019 - 1.62 ‰ (during the study period, the index increased by 3.80%), in turn, survival for 5 years or more of the trachea, bronchi and lungs cancer in 2015 amounted 2.57% and increased to 2.85% in 2019, which reflects an increase of 10.80%.

Regarding the proportion of deaths up to 1 year from the diagnosis of laryngeal cancer increased by 4.35% during the study period. As for the share of deaths from oncopathology of the trachea, bronchi and lungs from among those who were not registered, their share is higher and is about 19.44% - 25.71%. It was found that in all 100% of cases the diagnosis was also established at autopsy.

The death rate up to 1 year from the diagnosis of laryngeal malignancies, from the number of first registered, during the study period among both men and women was almost unchanged, and the mortality rate from trachea, bronchi and lung MN was higher among men and after 5 years decreased by 16.84%, while among women increased by 67.72%. Among patients with laryngeal MN special treatment is mainly combined or chemoradiation. At special treatment of MN of a trachea, bronchial tubes and lungs chemotherapeutic and combined methods of treatment prevail.

Conclusions: There is an increase in both the level and proportion of malignant neoplasms of the trachea, bronchi and lungs during the study period. Most often for the first time the diagnosis of MN on III – IV stages is established. The mortality rate from tracheal, bronchial and pulmonary MN is higher among men, and the main method of treatment of patients with laryngeal MN is chemoradiation, with tracheal, bronchial and pulmonary MN - chemotherapeutic and combined treatments.

KEY WORDS: respiratory system, morbidity, mortality, sex.

COMPARATIVE CLINICAL EFFICACY OF FIXED COMBINATION BUDESONIDE/FORMOTEROL VS MONTELUKAST + FORMOTEROL IN STEROID-NAIVE PATIENTS WITH BRONCHIAL ASTHMA COMBINED WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE WITH NEUTROPHILIC TYPE OF INFLAMMATION

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Introduction: The study of clinical and functional features and possible treatment options for combined pathology - bronchial asthma (BA) and chronic obstructive pulmonary disease (COPD) is one of the urgent problems of modern pulmonology.

There are ongoing discussions around the world on the diagnosis and personalized pathogenetically determined approach to the treatment of patients with the overlaps between asthma and COPD.

The aim: To evaluate the effectiveness and tolerability of two treatment regimens (fixed combination of inhaled corticosteroid/formoterol and leukotriene modifier and formoterol as basic therapy) in steroid-naive patients with asthma combined with COPD with neutrophilic inflammation.

Materials and methods: 30 patients with asthma combined with COPD (24 female, 6 male) mean age (59,9 ± 3,5) years, with a content of neutrophils in the blood > 4000 /µl, FEV1 on average (65,9 ± 2,9)%) pred were randomized 1: 1 to receive: budesonide/formoterol 160/4.5 µg BID - Group I (n=15), or montelukast 10 mg OD and inhalation of formoterol 12 mcg BID Group II (n=15). The duration of therapy was 12 weeks.

General clinical methods, asthma control questionnaires - ACT (asthma control test), ACQ (asthma control questionnaire), CAT (COPD assessment test), physical tolerance study (6-minute test) were performed before and after the end of studied course.

Patients in both groups did not differ statistically significantly in demographics, disease duration, PFT, and smoking status.

Results: According to the results of the ACT questionnaire after 12 weeks of treatment, the total score in group I increased from (15,6 ± 1,3) to (19,0 ± 0,7) points, p <0,05. The average ACQ score decreased from (2,5 ± 0,2) to (1,8 ± 0,2) points, p <0,05; mMRC - from (2,3 ± 0,2) to (1,8 ± 0,2) points, p <0,05; CAT – from (18,8 ± 1,7) to (15,3 ± 1.4) points, p <0,05. In Group II there was also a positive trend in the evaluation of questionnaires ACT, ACQ, mMRC and CAT, but no significant dynamics of the studied indicators was found. In patients of Group I, the 6 minutes walking distance increased by 19 meters from (305,7 ± 22,0) to (324,7 ± 23,1) m, p <0,05. In group II, the distance traveled remained almost at baseline. At the same time, patients of group I after treatment had a statistically significant decrease in dyspnea on the Borg scale before the test from (2,4 ± 0,2) points to (2,0 ± 0,2) points, p <0,05 and after the test with (3,5 ± 0,2) points to (3,0 ± 0,2) points, p <0,05.

Positive dynamics in clinical symptoms were accompanied with the improving the quality of life of patients - reduced the overall score of the questionnaire of quality of life of St. George's Hospital (SGRQ) from (31,4 ± 2,2) to (25,0 ± 2,4) points, p <0,05, symptom score - from (60,0 ± 6,0) to (42,5 ± 5,9) points, p <0,05, activity restriction from (26,9 ± 2,3) to (22,3 ± 2,6) points, p <0,05;

Conclusions: the use of the combined drug budesonide/formoterol (160/4.5) mcg BID for 3 months was more effective compared with the modifier of leukotrienes and formoterol: helped reduce the clinical symptoms of both diseases and improve exercise tolerability in steroid-naive patients with a combination of asthma and COPD with neutrophilic inflammation.

KEY WORDS: asthma; COPD, inhaled corticosteroids; budesonide; long acting beta-agonists; formoterol; management

EFFICACY AND TOLERABILITY OF METHOTREXATE IN THE TREATMENT OF PATIENTS WITH PULMONARY SARCOIDOSIS IN A DOSE-DEPENDENT MANNER

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Introduction: According to the recommendations of experts from the World Association of Sarcoidosis and Other Granulomatous Disorders (WASOG) for the use of MT in the treatment of patients with sarcoidosis, the drug is prescribed in a dose of 5 to 15 mg/week, depending on the extent of the process and the tolerability of the drug. The experience

was accumulated in observing a significant number of cases of insufficient effectiveness of the drug at a dose of 10 mg/week (slow rates of regression, stabilization of the process) in the course of our earlier studies. At the same time, increasing the MT dose to 15 mg/week increased the effectiveness of immunosuppressive therapy.

The aim is a comparative study of the efficacy and safety of methotrexate (MT) at a dose of 10 mg/week and 15 mg/week in patients with pulmonary sarcoidosis having contraindications to GCS therapy.

Material and methods: The study involved 44 patients with stage II pulmonary sarcoidosis (26 women and 18 men at the ages from 24 to 70) who have contraindications to the appointment of GCS therapy. In group 1 (28 patients), methotrexate was prescribed at a dose of 10 mg/week, in group 2 (16 patients), methotrexate was prescribed at a dose of 15 mg/week. The diagnosis and assessment of the dynamics of sarcoidosis were carried out taking into account clinical symptoms based on the results of chest CT-scan and body plethysmography. The significance of differences in indicators was determined using the Student's t-test and Fisher's exact test.

Results: The number of cases of clinical treatment without residual changes of a fibrous nature in the lung parenchyma in patients after treatment with methotrexate at a dose of 15 mg/week significantly increased compared to the same indicator in the group of patients after treatment at a dose of 10 mg/week (81.3% and 42.4 % respectively, $p = 0.02540$). An increase in the therapeutic dose of methotrexate from 10 mg/week to 15 mg/week leads to a decrease in the time it takes to achieve a clinical cure ((10.1 ± 0.5) months and (12.8 ± 0.8) months respectively, $p < 0.02$), indicating an accelerating rate of regression of sarcoidosis.

Side effects of methotrexate at a dose of 10 mg/week were observed in 10 of 28 patients (35.7%). In the group of patients taking methotrexate at a dose of 15 mg / week, the incidence of side effects was 37.5%.

Conclusion: In patients with pulmonary sarcoidosis, the number of cases of clinical cure without residual changes of fibrous nature significantly increases after treatment with methotrexate at a dose of 15 mg/week compared to the same indicator in the group of patients after treatment at a dose of 10 mg/week. Immunosuppressive therapy of patients with pulmonary sarcoidosis using the drug at doses of 10 and 15 mg/week is characterized by satisfactory tolerance.

KEY WORDS: pulmonary sarcoidosis, methotrexate, immunosuppressive therapy

COMPARATIVE ANALYSIS OF THE USE OF EPINEURAL SUTURE, HYDROGEL DURASEAL AND FIBRIN SEALANT TISSEEL IN THE RESTORATION OF DAMAGED SCIATIC NERVE

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Introduction: Microsurgical repair of peripheral nerve damage does not always give the desired results, and functional recovery is long and insufficient. Hydrogel compounds based on polyethylene glycol or fibrin have been suggested to reduce nerve ends injury. It is assumed that the coaptation of nerve ends with hydrogel can give better results of nerve regeneration compared to the epineural suture.

The aim: To conduct a comparative analysis of sciatic nerve regeneration and skeletal muscle changes after nerve repair with epineural suture, polyethylene glycol hydrogel and fibrin sealant.

Material and methods: In rats the sciatic nerve was crossed and sutured with 4 epineural sutures, 2 sutures with DuraSeal, and 2 sutures with Tisseel. On the 14th, 30th, and 60th day the density of myelin nerve fibers in the distal nerve and histological changes in m.gastrocnemius were examined.

Results: According to the results of morphometry, the density of myelin nerve fibers in the distal nerve increased in the group with DuraSeal and Tisseel at day 30 and day 60 compared with the epineural suture. On the 60th day the level of regeneration in the distal nerve stump was 21.5%, 29.2% and 32.1% of the values in the intact nerve. Remyelination and regeneration of large nerve fibers occurs with the use of DuraSeal, but complete elimination of the hydrogel at day 60 did not occur.

In m. gastrocnemius structural changes after denervation are characterized by a decrease in muscle fiber diameter and an increase in collagen density, mainly in the epimysia and perimisia, along the muscle vessels. Muscle malnutrition and fibrosis begin as early as on the 14th day after microsurgical nerve repair. In the DuraSeal group, fibrosis was delayed for up to 60 days and hypertrophy of some muscle fibers in the final term. In the Tisseel group, there was a delay in muscle fiber malnutrition and fibrosis for up to 30 days. The results indicate that well-timed repair of the damaged nerve by use of less traumatic microsurgical techniques can accelerate nerve regeneration and delay skeletal muscle malnutrition.

Conclusions: Application of DuraSeal and Tisseel with epineural suture does not interfere with nerve recovery, accelerates regeneration in the distal nerve stump and delays the malnutrition of denervated muscles.

KEY WORDS: muscle, sciatic nerve injury, epineural suture, DuraSeal, Tisseel.

COVERAGE OF MORAL, ETHICAL AND LEGAL PROBLEMS OF HEALTH INTERVENTIONS IN THE STUDYING OF SOCIAL MEDICINE AND PUBLIC HEALTH

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Introduction: Health professionals' work is closely related to solving numerous problems, both medical and non-medical in nature. Of great importance is forming an ethical and legal worldview and knowledge and skills in future Master of Medicine to solve specific problems in health care and the public health system from an ethical and deontological position based on legal norms.

The aim: Substantiation of the structure and purport (essence) of educational content on ethical-deontological and medico-legal health care issues in an educational course on social medicine and public health.

Materials and methods: The research methodology is based on the use of bibliographic and information-analytical methods and content analysis. We analyzed national educational standards governing the requirements for the preparation of Master of Medicine, recommendations of international organizations in health and medical education, including WHO, WHO / Europe, European Association of Schools of Public Health, Agency for Accreditation of Public Health Education, World Federation for Medical Education, Association of Medical School in Europe, etc.

Results: Based on the analysis of domestic regulatory and international and European recommendatory documents, the goals and objectives of training masters in ethical-deontological and medical-legal issues related to the public health system were determined. The purpose of training future masters was determined to form their social responsibility for professional activities in the health care system and the public health system in compliance with ethical and deontological norms and principles.

Study assignments included the assimilation of knowledge about the principles and rules of ethics; ethical issues in public health and medicine; the analysis of the main legislative and regulatory acts on these issues; as well as the acquisition of skills to solve ethical problems in public health based on ethical standards; on the justification for the adoption of appropriate decisions.

The educational content covers the essence of the concepts of "ethics", "morality", "bioethics", their principles, and rules. Particular attention is focused on the differences between medical ethics and public health ethics. The emphasis is on clarifying ethical and moral dilemmas in implementing medical practice and practice in the public health system. The program provides for the consideration of numerous activities in the public health system, the implementation of which may cause problems of a moral, ethical, or legal nature. This applies to vaccination issues, quarantine, contact tracing for sexually transmitted infections, placement in specialized institutions in connection with mental health problems, abortion rights, and the use of contraception, and others.

Given the collective nature of public health actions, they can, to a certain extent, limit the rights and freedoms of individuals. Thus, vaccination, which ensures the right of individual protection of each person against diseases controlled using immunoprophylaxis, and achieving the maximum population effect for society, may contradict the right to refuse vaccination, creates a potential threat to society's interests. The need for preventive measures aimed at protecting public health from the spread of HIV/AIDS may conflict with the protection of the rights of an AIDS patient or HIV-infected person, respect for his autonomy, mandatory registration of an infection case, voluntary consent to testing, epidemiological investigation, notification of partners and others.

These and other cases require healthcare professionals to comprehend the conflict of moral interests, the ability to build trusting relationships with civil society, deliver truthful and accessible information to consumers of services, conduct an open dialogue, awareness of responsibility and accountability to society. In the event of contradictions between common values and the rights or interests of an individual, it is important to consider the principles of social justice, democratic participation, creating benefits for a larger number of people, analyzing benefits and risks, political context, etc. Students are offered an analysis of possible contradictions and approaches to their solution in considering typical examples of clarifying such problems.

Conclusions: The educational content presented in the educational course on social medicine and public health on ethical-deontological and medical-legal issues of health care forms for future masters the competence component of solving the moral, ethical, and legal problems of interventions in the field of public health from the standpoint of respecting the rights of each individual and society in general, solving the conflict of interests of an individual and a group of people based on the provisions of the current legislation and taking into account bioethical principles.

KEY WORDS: medical ethics, public health ethics, ethical contradictions, legal problems, educational course.

BIOSTATISTICS KNOWLEDGE SELF-ASSESSMENT PERFORMED BY MEDICAL STUDENTS AS A MOTIVATIONAL FACTOR OF THE EDUCATIONAL PROCESS

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Introduction: The system of knowledge evaluation and checkup, including and self-assessment is a vital component of the educational process. This system allows you to set quantitative and qualitative measures of learning technology and manage the learning process. It also acts as an integral part of the process of diagnosing the acquired knowledge of learning subjects. As a didactic tool for learning management, it is aimed at ensuring the effectiveness of the formation of competencies, their effective application in practice, motivating learning activities and the formation of the need for self-education.

The aim of the study was to examine the issue of biostatistics knowledge self-assessment, performed by medical students who studied in various educational programs, its time consumption and efforts to master it.

Materials and methods: The information source is the results of a sociological survey of students of Bogomolets National Medical University, who successfully mastered the biostatistics educational course in various programs during the 2014-2016 academic year and 2018/2019 academic years. Experimental (EG) (n = 272) and control groups (CG) (n = 257) were formed and a pedagogical experiment was performed. EG students studied under the new program, which took twice as much time to master.

The study was conducted using analytical, sociological and statistical methods.

Results: In the course of the experiment, questions of students' self-assessment of their knowledge of the basics of biostatistics were studied. A score of 2 to 5 points was offered. The survey showed that students are critical enough in assessing their subject knowledge, especially this concerns the students of EG. 11.6±1.9 per 100 EG respondents and 10.9±1.9 per 100 CG respondents rated their knowledge as «excellent». Regarding the assessment of knowledge as «good», this indicator is 53.1±3.0 per 100 respondents in EG and is lower by 16.4% than in the CG of students – 63.5±3.0. 29.0±2.8 per 100 EC students rated their knowledge as «satisfactory», which is 24.5% higher than 23.3±2.6 among CG students. It is believed that, 6.1±1.5 per 100 students of EG and 2.3±0.9 per 100 students of CG have not mastered this subject during its studying.

Respondents were asked about the evaluation of teaching of biostatistics at the Department of Social Medicine and Public Health. It was suggested to rate the teaching level in grades of 1 to 5. It is gratifying to note that the vast majority of students in both groups rated the quality of teaching in this subject, mainly at 4 and 5 points. The difference is that 34.2±2.9 per 100 EG students gave a score of 4 points, which was 28.2% less than in CG – 47.6±3.1. At the same time, 57.0±3.0 per 100 EG students believed that teaching at the department was 5 points. This indicator was 26.7% higher than in CG – 45.4±3.1 per 100 respondents.

During the research work, questions on the time and effort spent by students to prepare for the subject were raised. 58.8±3.0 per 100 interviewed in EG and 57.7±3.1 per 100 interviewed in CG considered that they had given sufficient time and made good efforts to master the biostatistics. 25.6±2.6 per 100 students in EG and 28.5±2.8 per 100 students in CG, which is 11.8% more than in the same EG index, recognized that not enough time and attention was paid to mastering biostatistics.

Conclusions: Biostatistics knowledge self-assessment performed by medical students shows that training in an extended program with a much larger amount of educational content, promotes better learning and preservation of knowledge, awareness of the importance of biostatistics as a complex but essential subject, and more adequate assessment of their knowledge.

KEY WORDS: biostatistics, self-assessment of knowledge, pedagogical experiment.

PREVENTIVE MEASURES FOR COVID-19 CLOSE CONTACTS

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Introduction: During COVID-19 pandemic it is extremely important to use effective post-exposure prophylaxis methods which are safe for mucous membranes and have virulicide activity against coronaviruses. The SARS-CoV-2 enters the human organism through mucous membranes of nasopharynx and eyes. A person infected by SARS-CoV-2 is the most contagious during the incubation period of the disease when viral shedding is the highest. Also it is known that high nasopharyngeal viral loads correlate with disease severity, poorer outcomes, and mortality. Recommendations for COVID-19 close contacts include general prevention measures**.** However, just following public health measures does not have a direct effect on the virus. To date, it has been proven that decamethoxin solution in concentration 41.8-62.5 μg / ml (0.004-0.006% solution) and ultraviolet radiation (UV) with wavelength 222-230 nm have virulicide effect against coronaviruses.

The aim: To evaluate the effectiveness of additional to general prevention measures use of decamethoxin eye drops and physiotherapy procedures, including inhalation of decamethoxin solution and irradiation of the mucous membranes of the nose and mouth by ultraviolet quartz lamp, in COVID-19 close contacts. The work was done at public expense.
Materials and methods: We examined 30 COVID-19 close contacts. 15 of subjects followed the current prevention measures. Another 15 people in addition to general prevention measures were using 0.02 % decamethoxin eye drops, inhalation with 0.02 % decamethoxine solution - 4 ml via jet nebulizer for 10-15 minutes (through a facemask), irradiation of the mucous membranes of the nose and mouth by ultraviolet quartz lamp for 30 s once a day - for 10 days after contact. In this study we evaluated data obtained from questionnaire, PCR testing, clinical and radiological (computer tomography) methods of examination.
Results: The use of decamethoxin eye drops and physiotherapy procedures allowed:
1) to prevent the coronavirus disease in 86.7% of COVID-19 close contacs, that is 46.7% higher compared to persons who followed only the current general prevention measures.
2) in case of coronavirus disease - to reduce the disease duration to 7-10 days, to reduce the severity of the disease and to prevent complications.
Conclusions: The application of proposed measures can increase the effectiveness of prevention of coronavirus disease. Physiotherapy procedures and decamethoxin eye drops were well tolerated by the subjects, had no side effects, that allows us to recommend them for practical use.

KEY WORDS: portals of entry, decamethoxin, ultraviolet radiation.

THE VALUE OF ISO 9001 SERIES STANDARDS FOR CREATING A QUALITY MANAGEMENT SYSTEM

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Introduction: The current problem in the realization of the right of a citizen to health care is the low quality of medical care and medical services in health care facilities of Ukraine. In the context of the health care reforms initiated by the state, the creation of a quality management system is seen as a guarantee of ensuring the effective functioning of modern medicine.
The aim: Discourse the advisability of implementing the principles of general quality management in accordance with the requirements of ISO 9001 series standards to achieve maximum efficiency of medical institutions.
Materials and methods: The following methods were used in the study: bibliographic, historical, method of system approach and system analysis. International recommendations, legal documents of Ukraine on improving the quality of health care and the experience of implementing quality management systems in the world were processed using these methods.
Results: Problem of ensuring the quality of medical care in Ukraine is solved mainly through the introduction of two management functions "control" and "quality assessment" according to state-defined criteria. At the same time, the experience of other countries, where the health of the population is much better, shows that quality cannot be ensured by its control alone. In accordance with the requirements of the international standards of the ISO 9001 series, quality assurance is planned, implemented and constantly maintained at each stage of the institution. This conceptual approach corresponds to the paradigm of system quality management and provides for systematic and continuous activities aimed at improving the organizational and production areas identified by the organization in the process of its activities. Whereas the control and evaluation of the quality of medical care are only separate links in the complex of many elements of a quality management system.
Conclusions: More than 150 countries around the world, including Ukraine, use the ISO 9001 series standards. These standards are based on customer service orientation. This enables healthcare facilities to continuously and effectively manage the quality of care and provide greater assurance to patients that their needs for strengthening and improving personal health. But today in Ukraine the work on the creation and implementation of a quality management system in the activities of medical institutions is insufficient.

KEY WORDS: Quality of medical care, international standards, medical institution.

STRESS RESISTANCE ASSESSMENT AS A BASIS OF STUDENTS` PRIMARY PREVENTION THAT RECEIVED LEARNING STRESS

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Introduction: Given the recent developments in the world related to the COVID-19 pandemic the preservation of the ability of employees whose work is associate with a risk to life and the primary prevention of violations in their functional status is the key to maintain a staff in the areas of health care. It's associated with extreme working conditions with a risk to both physical and mental health, which causes the occurrence of occupational diseases, the development of occupational deformation, and an affects the reduction of professional longevity of the employee. Stress resistance plays an important role as a basic mechanism of protection against stressful situations and their negative effects on human health and human workability. The assessment of stress resistance is the basis of primary prevention for employees it associates whose work with constant psycho-emotional stress.

The aim: Stress resistance assessment of medical students to develop recommendations for primary prevention of extreme acting workers in the detection of disorders in their functional status.

Materials and methods: We conducted the study using the software and hardware complex "Psycholot-1" in which medical students examine by the methods of "Pendulum", "Individual Strategy" and by the test "Adaptability". The study involved 42 medical students from 18 to 27 years, in which the sample size ratio of negative/positive groups is one. The estimated sensitivity and specificity is 70%, error 20%, the level of significant difference $p = 0.05$ at a power of 80 %.

Results: Spearman's rank correlation index was calculated when analyzing the relationship between the values of the number of hits to zero (X_1) in the reaction's study to a moving object (method "Pendulum") and the number of points (X_2) scored during the determination of risk predisposition (method "Individual strategy"). The value of the correlation coefficient is $\rho = 0.339$ (statistically significantly different from zero, $p = 0.0244$). During the analysis of the relationship between X_1 and neuropsychological stability (X_3), Spearman's rank correlation index was calculated. The value of the correlation coefficient is $\rho = -0.385$ (statistically significantly different from zero, $p = 0.0118$).

Conclusion: The results show a positive correlation between the values of the number of hits to zero (X_1) and the number of points (X_2) ($\rho = 0.339$, $p = 0.0244$) an increase in scores is accompanied by an increase in hits to zero in the reaction's study to a moving object. A negative correlation between X_1 and neuropsychological stability (X_3) ($\rho = -0.385$, $p = 0.0118$) was revealed, namely an increase in hits to zero characterizes the decrease in neuropsychological stability of a person for hyper-concentration at tension. The data got to show that to increase a person's stress resistance it's necessary to improve the results of the nervous processes balance which can be achieved by performing physical exercises (for example, CrossFit) and applying coping strategies.

KEY WORDS: stress resistance, professional longevity, functional status, prevention.

HYGIENIC ASPECTS OF SUBSTANTIATION OF CONCEPTUAL BASES OF DEVELOPMENT OF SYSTEM OF PUBLIC HEALTH CARE OF UKRAINE

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Introduction: Having signed in the of 2014 a package of documents on the Association with the EU, Ukraine has undertaken a number of political and socio-economic commitments. Among them, there is one concerning the creation of a new National Healthcare System based on the organization of public health, which is primarily rooted in the principles of preventive medicine and aims at averting diseases, prolonging active life and strengthening human health as a prerequisite of the sustainable development and economic growth.

The aim of the work was to develop a scientific basis for improving the ways of building a national public health system based on the hygienic principles of prevention priority.

Materials and methods: During the observation period (2007-2017), samples of atmospheric air, from Rivne, 4 district centers and 5 rural districts; water supply facilities (centralized and decentralized); industrial facilities were studied to determine the volume and classes of industrial waste and their impact on soil pollution. To study the prevalence and morbidity of the population of Rivne region, medical cards were selected and statistical reports of city and district health departments were analyzed. As a result, in the process of work, the researchers used the following methods:, analytical, epidemiological, medico-statistical, hygienic diagnostic, comparative and systematic approach.

Results: On the basis of generalization of data of full-scale experiment on studying of a condition of environment, definition of correlations with indicators of prevalence and morbidity of the population of the Rivne area on the one hand, and theoretical consideration of real administrative decisions on public health, existing normative-methodical documents and legislative acts – on the other hand, the conceptual scheme of development of the domestic system of public health care on hygienic principles of prevention is developed and substantiated.

Through a series of field studies, the work provides an assessment of the risk to public health of the complex impact of the prior environmental factors (air, drinking water).
The role of the general system analysis of field experiment data and materials of analytical epidemiology in the introduction and preservation of socio-hygienic monitoring and its generalization in the form of territorial ecological and hygienic passports is substantiated. It is foreseen that the identification of probable risks of these passports should be the basis for forecasting the state and qualitative changes in public health and the formation of clinical pathology, on the one hand, and identifying weaknesses, prevention of which will guarantee good health – on the other. In general, these approaches are the basis for the formation of the public health principles.
Conducted scientific substantiation of conceptual approaches to rebuild a national public health system based on the priority of prevention and application of the principle "Health in all state policies", development of theoretical principles and methodological approaches to justify the development of socio-hygienic (ecological and hygienic) passports of separate settlements as a tool for sustainable development of territories, improvement of living conditions of the population and preservation of its health, establishment of dependence between operating environmental factors; indicators of their danger with the definition of critical organs and systems of the body and the real characteristics of morbidity.
Conclusions: Under the conditions of the settlement passport certification with the definition of environmental, economic and social factors that characterize the living conditions of the population, determining their risks and hazards, conditions are created not only for planned development, but also for predicting positive and negative consequences for further management decisions.

KEY WORDS: monitoring, health, environment, hygienic diagnostic.

EFFICACY OF A FIXED COMBINATION OF BUDESONIDE/ FORMOTEROL COMPARED WITH THE COMBINATION OF MONTELUKAST + FORMOTEROL IN IMPROVING OF PULMONARY FUNCTION INDICES IN STEROID-NAIVE PATIENTS WITH BRONCHIAL ASTHMA COMBINED WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE WITH NEUTROPHILIC TYPE OF INFLAMMATION

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Introduction: The combination of bronchial asthma (BA) with chronic obstructive pulmonary disease (COPD) is characterized by symptoms, that are usually characteristic of both asthma and COPD. In the pathogenesis of asthma-COPD overlap neutrophilic type of inflammation plays significant role. It associates with frequent respiratory infections in the anamnesis, more severe course of the disease, worse lung function, greater pulmonary hyperinflation and thickening of the bronchial walls. Therefore, such patients require careful follow-up and the appointment of pathogenetic therapy.
Special attention should be paid to steroid-naive patients (never treated with glucocorticosteroids) for asthma combined with COPD.
The aim of this study was to evaluate the efficacy and tolerability of two basic treatment regimens and to compare their efficacy: inhalative coticosteroide (ICS)/formoterol vs leukotriene modifiers in combination with formoterol in steroid-naive patients with asthma combined with COPD with neutrophil inflammation.
Materials and methods: 30 patients with asthma combined with COPD (24 female, 6 male), mean age (59,9 ± 3,5) years, with content of neutrophils in the blood > 4000 / µl were randomized 1: 1. Group I (15 patients) - received basic therapy with combination of budesonide/formoterol 160 / 4,5 µg BID. Group 2 (15 patients) received basic therapy with montelukast 1 tab (10 mg) OD and inhalation of formoterol 12 mcg BID. The duration of therapy was 12 weeks.
Pulmonary function indices (PFT) (spirometry, body plethysmography, muscle strength, respiratory drive, impulse oscillometry (IOS)) were studied before and after studied course of treatment.
Patients in both groups did not differ statistically significantly in demographics, disease duration, PFT indices, and smoking status.
Results: The use of a fixed combination of budesonide /formoterol, due to distal penetration into the bronchial tree, led to a significant increase in bronchial patency at all levels, including patency at the level of small bronchi: FVC increased from (88.0 ± 4.2)% to (97.7 ± 5) , 2)%, p <0.05; FEV1 - from (66.7 ± 2.8)% to (75.4 ± 3.4)%, p <0.05; PEF from (72.0 ± 3.6)% to (80.4 ± 3.5)%, p <0.05; MEF75% from (43.2 ± 3.7)% up to (52.5 ± 3.5)%, p <0.05 MEF50% from (27.9 ± 2.6)% up to (33.8 ± 2) , 3)%, p <0.05; MEF25% from (27.3 ± 2.8)% to (34.4 ± 3.0)%, p <0.05, which indicated a significant reduction in PEF significantly increased, while other indicators remained within the reproducibility. The studied treatment regimens did not statistically significantly affect the strength of respiratory muscles, neuro-respiratory drive, impulse oscillometry.
Conclusions: the use of the combined drug budesonide/formoterol (160 / 4.5) µg BID for 3 months, contributed to a more pronounced reduction of bronchoobstruction at the level of large, medium and small bronchi in steroid-naive patients with asthma combined with COPD than the use of leukotriene modifier with formoterol.

KEY WORDS: asthma, COPD, inhaled corticosteroids, leukotriene modifier, treatment

CHRONIC OBSTRUCTIVE PULMONARY DISEASE EXACERBATION TREATMENT

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Introduction: Nowadays negative impact on human health is increased due to persistent actions of chronic obstructive pulmonary disease (COPD) risk factors associated with an increased frequency of acute respiratory infections events, which are a major cause of COPD exacerbation. In the study of inflammatory processes in patients with COPD exacerbation, special attention is paid to cellular metabolism of an arachidonic fatty acid (FA), which is a substrate for the synthesis of proinflammatory eicosanoids – leukotrienes of the 4th series and prostaglandins of the 2nd series. The key mechanism for the release of this arachidonic FA from phospholipids of the cytoplasmic membrane into a cellular cytoplasm is the activation of the phospholipase A_2 enzyme due to excessive lipoperoxidation and entry into the cellular cytoplasm of Calcium ions.
The aim of the study was to research an efficacy of fenspiride administration in the treatment of COPD exacerbation.
Materials and methods: The study included 81 patients with non-severe exacerbation of COPD. The control group consisted of 40 healthy people. Patients were randomized to two groups. The first group included 40 patients receiving standard anti-inflammatory therapy. The second group included 41 patients whom, in addition to standard anti-inflammatory therapy were prescribed fenspiride at a daily dose of 160 mg orally. Background inhalation therapy was continued without changing the dosage. Examination of patients was performed before and after a two-week course of treatment. In addition to routine COPD screening investigations, patients were performed gas chromatographic analysis of phospholipid spectrum of the erythrocyte membrane phospholipid by a Color-500 series chromatograph, as well as hematocrit and blood viscosity measurements with a rotary viscometer. In both groups, an analysis of changes in the fatty acid spectrum in comparison with the dynamics of clinical symptoms and rheological properties of blood was performed.
Results: In patients with COPD in both groups compared to similar values in healthy individuals there was a decrease of arachidonic FA in the spectrum of phospholipids of erythrocyte membranes, along with a shift in the balance between saturated, unsaturated, and polyunsaturated FA towards the predominance of saturated FA. According to the results of gas chromatographic analysis, patients of the second group were stratified into two subgroups: A (26 patients) with low content (less than 8% of all phospholipids) and B (15 patients) with high content (more than 8% of all phospholipids) of arachidonic FA in spectrum of phospholipids of erythrocyte membranes.
Analysis of chromatographic parameters in patients of the first group showed that after treatment the fatty acid spectrum of phospholipids of erythrocyte membranes did not change significantly as well as the rheological properties of blood. The patients of the second group showed more rapid positive changes in the clinical symptoms of exacerbation than the patients of the first group.
The patients of subgroup A showed an improvement in the ratio between saturated, unsaturated, and polyunsaturated fatty acids in phospholipids of the membranes of erythrocytes in the direction of reducing of relative content of saturated fatty acids in the phospholipid spectrum. These changes were combined with rapid regression of clinical symptoms of COPD exacerbation within the first week of treatment and with improvement of the rheological properties of the blood.
In the patients of subgroup B were not observed improvement in the chromatographic spectrum of phospholipids in erythrocyte membranes. The regression of clinical symptoms of COPD exacerbation was slower than in patients of subgroup A – occurring within the second week.
Conclusion: To more effectively using of a fenspiride in the treatment of exacerbations of COPD, should be used the chromatographic criterion for fenspiride administration – low content of arachidonic fatty acid (less than 8% of all phospholipids) in spectrum of phospholipids of erythrocyte membranes.

KEY WORDS: fenspiride, arachidonic acid, fatty acid chromatographic spectrum, blood viscosity

A NEW DIAGNOSTIC PREDICTOR FOR PROPHYLAXIS OF THE DEVELOPMENT OF SEVERE COMPLICATIONS OF ACUTE PANCREATITIS

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Introduction: Acute pancreatitis is one of the most pressing problems of modern medicine due to the development of severe complications that cause mortality in the range of 40 - 70%. The most common causes of death in patients with acute pancreatitis are purulent-septic complications, which in turn cause the development of sepsis, erosive bleeding, pancreatic and gastrointestinal fistulas, mechanical jaundice, etc. At late diagnosis of these complications mortality reaches more than 85% owing to multiorgan insufficiency. There are many rating scales for the severity of acute pancreatitis, but known screening methods are ineffective. Thus, the issue of timely diagnosis of purulent-septic complications of acute pancreatitis, as a method of preventing the development of multiple organ failure, remains relevant today.
The aim: Study of the role of Helicobacter pylori (HP) as an etiological factor of acute pancreatitis and a marker of the development of its purulent-septic complications.
Materials and methods: The study involved 124 patients who were divided into the main group (66 patients with moderate severity and severe course) and the

comparison group (58 patients with mild course). There were 71 men (57,3%), women - 53 (42,7%). All patients underwent a screening study of HP in feces and a serological blood test to detect antibodies, namely immunoglobulin M to HP (determination of the phase of the disease - acute or chronic).

Results: The fecal rapid test was positive in 84,7% of patients. During serological examination, a positive result was obtained: 24 hours after hospitalization - in 13,8% of patients in the comparison group, in 34,8% of patients in the main group; after 7 days - in 15,5% of patients and 63,3% of patients, respectively. HP is sensitive to most of the antibiotics used to treat purulent-septic complications of acute pancreatitis. After completing the course of antibiotic therapy, patients underwent a second study of HP (eradication was achieved in 37 (94,9%) patients).

Conclusions: An increase in the number of positive results of serological examination by 28,5% ($P < 0.001$) in patients of the main group 7 days after hospitalization proves that HP is not only one of the etiological factors of acute pancreatitis, but also a possible marker of the development of its purulent-septic complications. The use of this marker makes it possible to quickly, objectively and timely predict the occurrence of purulent-septic complications of acute pancreatitis and prevent the development of multiple organ failure, and thus reduce mortality in this pathology.

KEY WORDS: acute pancreatitis, purulent-septic complications, marker, diagnostics.

MORPHOLOGICAL MANIFESTATIONS OF CRYPTOCOCCOSIS IN THE THORAX ORGANS

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Introduction: Among the representatives of the fungi of the genus Cryptococcus, two species are pathogenic for humans – Cryptococcus neoformans and Cryptococcus gattii, and the former is responsible for most diseases caused in people with immunodeficiency of different etiologies, and the latter can cause disease in individuals with intact immunity. Human infection most often occurs by inhalation of the yeast forms of the fungus, so the lungs are the primary site of injury. HIV infection is a predisposing factor for the development of cryptococcosis. The likelihood of developing mycosis to a certain extent depends on the biological properties of the pathogen – its virulence, the ability to form a capsule. In addition, it was found that the differences between the strains of cryptococci in terms of virulence determine the pathomorphological picture in the tissues, which is characterized by a decrease in the foci of destruction and an increase in the granulomatous reaction.

The aim: To determine the peculiarities of tissue reactions of various organs of the thorax during cryptococcal infection in patients with various changes in immunity.

Materials and methods. We studied 10 cases of cryptococcal lesions of the thorax organs, of which 7 patients were diagnosed with HIV infection, among them 2 patients had terminal stage of HIV infection with a fatal outcome; in the remaining 3 cases there were nonspecific changes in immunity status. A histological study of tissues stained with hematoxylin and eosin, according to Gomori and the PAS reaction with Alcian blue (PAS-AS) was carried out. The histological examination was done on an Olympus BX51 light microscope with an Olympus SP-500 UZ camera attachment and the PROMICRA license "QuickPNOTO MICRO 2.3"was used.

Results: In HIV-infected patients, cryptococosis manifested itself in 1 case in the form of foci of necrobiosis in the lymph node with the formation of numerous microcysts, in 2 cases – in the form of cryptococcoma-mycetoma of the lungs, in 2 cases it proceeded in the form of a granulomatous inflammatory process (were amazed lungs and pleura). From 2 autopsy cases, cryptococcosis in 1 case was accompanied by the development of massive necrotic changes in the lung tissue, and in the other there was no obvious tissue reaction. In HIV-negative patients, cryptococcal infection proceeded in 1 case as a solitary organized cryptococcoma, in the other – foci of necrobiosis were revealed in the pleural neoplasm tissue, and in another case, a sarcoid inflammatory cell reaction of the lungs was observed in the lungs in combination with a completely fibrosed cryptococcoma. Cryptococci in the affected tissues were represented by rounded cells with a diameter of 2 to 20 μm. The use of PAS-AS made it possible to visualize cryptococci with their capsules. With a prolonged course of the pathological process, an increase in the number of cells with altered shapes (oval, sickle, biconcave cells) was observed. The ratio of the number of encapsulated cells to non-capsular forms in granulomatous inflammation was significantly higher ($p < 0.05$) than in foci of necrosis or foci of necrobiosis.

Conclusions: The development of cryptococcosis depends both on the state of the patient's immune system, the duration of the pathological process, and on the pathogenicity of cryptococci, their ability to form a capsule. Morphological changes in the tissues of the lungs, pleura, and lymph nodes in patients with cryptococcosis are represented by a wide range of changes: from minimal cellular reaction, predominance of necrobiosis and necrosis of the affected tissue, granulomatous cellular reactions, as well as the formation of cryptococcus mycetoma.

KEY WORDS: Cryptococcus, morphology, tissue's reaction

ASSESSING THE MEDICAL CAREER CHOICE FACTORS UNDER THE CONDITION OF COVID 19 EPIDEMICS

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Introduction: The medical career choice motivation is a significant part of the physicians' professional growth, which quite often predisposes for the successful medical career. The motivation of first choice and motivation of staying in the profession may differ, but they define how the person functions as a doctor. The medical career choice motives could be classified into several groups: the social-altruistic (treating people, saving humanity), pragmatic (making a successful career, earning money) and scientific ones. When questioned, many surveyed don't call their real motives of career choice.. The questionnaire shows the external motives, which are perceived by the person.. The internal career choice motivation sometimes may be even not realized by the person. The challenges of the previous year, the COVID 19 epidemics and necessity to adapt quickly to already existing conditions significantly changed position of doctors and made some people revise their professional prospective. The danger of the COVID 19 infection has affected the career motivation, and it makes obvious not the external, but internal career choice factors.

The aim: The study aim was to detect the medical career choice motivation of already practicing doctors and researchers, distinguishing between the exterior and interior motives.

Materials and methods: The paper represents data of 120 medical PhD students of Bogomolets National medical university, questioned in December 2020-January 2021. The participation in questioning was voluntary, upon receiving consent of the participants. The participants were asked the following questions: the questions on the medical career choice, where they has to choose between "On somebody's advice", "To make a career or earn money", "To help and save the others", "Without any reason" and the career choice question "I support my choice now", "I regret it" or "It's difficult to say". The next question "Are you afraid of working with people now regarding the COVID 19?" could be answered as "Yes, I am", "No, I am not" or "It's difficult to say". The next question was "If you were to work only with the COVID 19, you would" with the options "I accept it", "I refuse it directly", "I'll cheat and refuse, but indirectly" or "I don't know what I would do" option. Then the interviewees were offered to write about the challenges and problems of Ukrainian health service.

Results: Analyzing the career choice factors by the medical PhD students, the majority (70.6%) confirmed altruistic motivation, while 11.8% stated about external motivation(family tradition) and 5.9% chose the career by the advice. Another 5.9% chose the career for pragmatic motives, and 5.9% couldn't define their motives. This altogether makes up 29.59% of externally motivated physicians. 70.6% of the surveyed like their choice, and 29.4% regret it, which almost coincides with the motivation distribution. As for encountering with danger at work during the COVID 19 epidemics, 52.9% don't claim any fear or anxiety related to the disease, while 35.3% are anxious and 11.8% can't define their attitude, which totally represent a half of the surveyed. Despite the motivation and fear, if the surveyed had to work with the COVID 19 patients, nobody chose the option "cheating in order to avoid the work", but 5.9% stated they would refuse. 70.6%stated they would agree to work, which corresponds to conscious career choice data, and 23.5% couldn't define. Concluding on the problems of the Ukrainian HC regarding the COVID 19, the surveyed recalled low salaries, funding, protocols and insurance.

Conclusions: The analysis of the career choice factors by the Bogomolets NMU PhD students showed predominance of the conscious altruistic-social motives(70.6%) against the pragmatic and unconscious choice, which coincides with the number of those who are satisfied and regret their choice respectively. The same number of the surveyed stated they would work with the COVID 19 patients, upon the necessity(70.6%). So, the interior socially stipulated medical career choice predisposes for appropriate performing medical duties.

KEY WORDS: Medical career, motivation, epidemics.

OCCUPATIONAL INJURIES OF HEALTH CARE WORKERS AS A RESULT OF ILLEGAL ACTIONS OF THIRD PERSONS IS AN URGENT GLOBAL HEALTH PROBLEM

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Introduction: Numerous studies conducted by the WHO has shown that health workers are the highest risk group for aggression against them in the workplace, which is associated with constant communication with patients and their relatives. This often leads to unpredictable consequences for both the physical and mental health of healthcare professionals.

The aim: Investigate cases of occupational injuries of medical personnel in health care facilities of Ukraine as a result of illegal actions of third parties.

Materials and methods: researching, statistical analysis.

Results: With the active participation of the WHO and other international health and safety organizations, large-scale studies of cases of aggression against health care workers in the workplace have been conducted in many countries around the world, including Australia, Brazil, Bulgaria, China, Mozambique, Palestine, Portugal, South Africa, Thailand and other. Studies included as registered official appeals to the police or governmental institutions, as well as anonymous answers using a specially designed WHO survey questionnaire "Workplace Violence in the Health Sector. Country case studies research instruments".

Investigation showed South Africa has the highest level of physical violence in the health care area. Up to 71.1% of public sector respondents and 51.6% of private-sector respondents said that they had experienced physical violence at least once by patients or hospital visitors during their work in the medical field. Respondents suffered from physical violence in Thailand with 10.5%, Bulgaria with7.5%, Brazil with 6.4%, the lowest level was registered in Lebanon with 5.8%.

In Ukraine, no special large-scale surveys were conducted on aggressive actions directed against medical workers in health care facilities of different regions by hospitals, gender, age, etc. Information about violence against health workers comes only in isolated cases.

While in Ukraine, according to the police and the judiciary data, approximately 2.2×10^{-4} to 0.001% health care professionals of the total number of medical workers suffered from physical violence shown by patients or their relatives from 2006 to 2018, in all over the world according to WHO studies these figures are much higher from 8% to 38% in different countries, that could be explained the concealment of cases of physical violence against personal in medical institutions of Ukraine.

Conclusions: The experience of Ukraine and the countries of the world in the direction of research of outsiders aggressive actions concerning medical workers in the workplace has shown:

While in Ukraine, according to the police and the judiciary data, approximately 2.2×10^{-4} to 0.001% of health workers suffered from physical violence against health care workers, the number of medical professionals who reported physical violence in the workplace against them are much higher more than 8% to 38% all over the world. Such a difference in the number of cases may indicate the understatement and underestimation of cases of physical aggression against medical workers in health care institutions of Ukraine.

Thus, research, analysis of cases of violence against health care workers in Ukraine and assessment of the risks of aggression against health care workers in health care facilities is relevant. Such research can be a powerful tool for developing effective measures to prevent and reduce the risk of violence and aggression against health care workers in the workplace, as well as to develop effective medical legislation to protect health workers.

KEY WORDS: Health workers**,** workplace violence, aggressive actions, medical legislation.

ONLINE CHATBOT ELOMIA AS A TOOL FOR THE PREVENTION OF DEPRESSIVE DISORDERS

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Introduction: In times of global pandemic, the problems of prevention of mental disorders become especially important. There are two main factors that have exacerbated the mental health crisis around the world: 1) quarantine restrictions that have led to significant changes in the normal rhythm of life (job loss, social isolation, lack of support, distance job, refusal to rest, etc.); 2) destructive effect of coronavirus on the patient's nervous system, which shows itself in prolonged periods of low mood, depressive and suicidal manifestations. Despite the general consensus of the medical community on the catastrophic effects of COVID-19 on the mental health of people around the world, national systems simply cannot invest large resources in mental and psychological care programs that are accessible to the general public. In this light, online services aimed at providing first aid can play a special role. One such service is the Elomia application, created on the basis of artificial intelligence and based on the principles of cognitive-behavioral therapy. The application allows users to: 1) receive round-the-clock support in English; 2) share their own experiences; 3) perform exercises aimed at reducing the level of general anxiety.

The aim of the thesis is to present the results of a control study of the effectiveness of Elomia in reducing the tendency to depression.

Materials and methods: In order to conduct the study, two groups of respondents aged 19 to 23 years were formed – experimental (n = 42) and control (n = 40). Criteria for inclusion in the study groups were: 1) the presence of a predisposition to depression; 2) fluency in English (at a level not lower than Upper-Intermediate). Patient Health Questionnaire-9 (PHQ-9) was used to diagnose the tendency to depression.

The subjects of the experimental group had to use the chatbot Elomia for 4 weeks after first testing. There were no restrictions or requirements on the amount of time spent communicating with the chatbot.

Respondents of control group were asked to seek psychological help from the Depression self-help guide developed by The National Health Service of the United Kingdom for 4 weeks.

Results: At the beginning, the respondents of the experimental and control groups were characterized by a moderate level of predisposition to depression. None of the participants suffered from depression during the experiment. Comparison of data distributions by levels of predisposition to depression in the experimental and control groups did not show statistically significant differences.

After four weeks, retesting revealed that in the experimental group there was a decrease in the average predisposition to depression by 28%, while in the control group this decrease reached only 4%.

Conclusions: The present study demonstrates that the online chatbot Elomia can be used to prevent depression in people who show a moderate predisposition to depression and for various reasons can not seek medical help. The advantages of the service are: easy and round-the-clock availability, the ability to use from a mobile phone, a wide range of exercises to combat various aspects of low mood and predisposition to depression.

KEY WORDS: depressive disorders, depression, communication,

THE RELATIONSHIP BETWEEN VITAMIN D STATUS, METABOLIC PARAMETERS AND ADIPOKINE LEVELS IN OVERWEIGHT AND OBESE ADOLESCENTS

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Inroduction: Overweight and obesity affect vitamin D status in the body by additional depositing vitamin D in adipose tissue, which contributes to a decrease in its active metabolites due to a violation of hydroxylation processes. Increases in adipose tissue affect the serum adipokine levels, which affects metabolic processes and general condition of the body.
The aim of the study was to determine the relationship between vitamin D status and parameters of lipid and carbohydrate metabolism with adipokine levels in overweight and obese adolescents.
Materials and methods: 136 adolescents with overweight and obesity (60 overweight and 76 obese adolescents) were examined. The mean age of children was 15.5 ± 2.3 years. Anthropometric measurements and body mass index (BMI) were established in all adolescents. BMI was determined according for world health organization recommendation. To determine vitamin D status using the immune-enzyme method, blood serum levels of calcidiol (25(OH)D) were determined. The leptin and adiponectin levels, basal insulin levels were measured in all adolescents by using the immune-enzyme method. The blood glucose level, total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C) and triglycerides (TG) by were measured by enzymatic methods. Based on the obtained research results homeostasis model assessment of insulin resistance (HOMA-IR) index, atherogenic index of plasma (AIP), very low-density lipoprotein cholesterol (VLDL-C) and non-HDL-C were calculated in all adolescents with overweight and obesity. All research results were processed statistically. The relationship level was established using correlation analysis.
Results: The mean serum level of 25(OH)D was 14.69 (10.27–20.30) ng/mL in overweight adolescents and 12.71 (9.36–17.37) ng/mL in obese adolescents. The study has determined vitamin D deficiency among overweight adolescents with BMI 85-97th percentiles – in 70.0 % and obese adolescents with BMI over 97th percentile – in 77.6 %. Serum 25(OH)D levels in overweight and obese adolescents have a positive significant correlation with adiponectin (r=0,592, p=0,000) and inverse significant correlation with leptin (r=-0,498, p=0,000), were defined. The effect of adipokines on metabolic processes in the body was confirmed by their relationships with the main parameters of lipid and carbohydrate metabolism. It has been established that leptin levels have significant inverse correlation with HDL-C (r=-0,631, p=0,000) and positive significant correlation with LDL-C (r=0,189, p=0,028), TG (r=0,384, p=0,000), non-HDL-C (r=0,261, p=0,002), basal insulin level (r=0,788, p=0,000), HOMA-IR (r=0,743, p=0,000). Adiponectin levels have positive significant correlation with HDL-C (r=0,587, p=0,000) and inverse significant correlation with LDL-C (r=-0,244, p=0,004), TG (r=-0,359, p=0,000), non-HDL-C (r=-0,306, p=0,000), basal insulin level (r=-0,755, p=0,000), HOMA-IR (r=-0,709, p=0,000).
Conclusions: The vitamin D status in overweight and obese adolescents have a relationship with the serum adipokine levels. The severity of lipid and carbohydrate metabolism metabolic disorders in overweight and obese adolescents have a relationship with the adipokine levels.

KEY WORDS: vitamin D, adipokines, metabolic syndrome.

CAD PATIENTS WITH HYPERTENSION AND SOMATOFORM DISORDERS REHABILITATION STRATEGIES

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Introduction: In the COVID-19 pandemic improvement of blood oxygentransport function and stabilization of the psychoemotional sphere is a priority for rehabilitation of CAD patients with hypertension, especially at anxiety-depressive disorders.
The aim: Investigated the functional activity of erythrocytes(ER) and hemoglobin(Hb), cardiohemodynamics and psychological status at landscape imagi-native kinesiotherapy, holographic modeling and correction with mildronate.
Materials and methods: In 50 patients (men aged 47.8±1.8 years) with stable exertional angina pectoris II-III FC, stage II hypertension, anxiety-depressive disorders under traditional treatment (β-blockers, calcium channel blockers, nitro drugs, tranquilizers), conventional rehabilitation exercises (1 gr.) and in 50 patients (men aged 46.7 ± 1.6 years) with mildronate combination - the metabolic drug, 10% -5ml intravenous bolus under holographic modeling (2 gr.) before and after 10 days of rehabi-litation were studied ER resistance, its glycolytic enzyme activity and antioxidant protection, the level of 2,3-diphosphoglycerate (2,3-DPhG) , hydroxy-, deoxy-, methemoglobin (MetHb), Hb fractions - HbAo, HbA1, HbF, cardiohemodynamics.
Coronary artery angiography, bicycle test, Holter ECG, 24-h our blood pressure monitoring, disc electrophoresis, EchoCG,"Test self-identification system", "Self-assessment of the level of psychoemotional exertion", holographic modeling - the spatial unfolding of the internal holo-gram of our state (engram) created by the unfolding of an integrative image with its subsequent reflection in external objects with positive feedback to stabilize and restore cardiovascular sys-tem and psychoemotional sphere.

Results: After a 10-day rehabilitation cardiohemodynamics and psychological status improved more significantly in the 2gr. than in the 1gr. patients: an increase in the minute volume of blood circulation, cardiac and stroke indices, a decrease in pressure in the pulmonary artery, and a reduction in the phase of tension in the right ventricle ($P < .0.05$). After rehabilitation in the 1gr. systolic blood pressure decreased from 177 ± 2 to 148 ± 1 mm Hg ($P < .0,05$) , diastolic – from 107 ± 2 to 94 ± 1 mm Hg, in the 2 gr respectively - from 178 ± 1 to 132 ± 1 mm Hg ($P < .0,05$) and from 109 ± 2 to 82 ± 1 mm Hg ($P < .0,05$). In 84% of patients of 2gr. and 21% –1 gr. decreased the frequency and duration of ischemic episodes.

After rehabilitation in patients 2 gr. favorable changes in the ER state were revealed: the con-tent of MetHb and HbA1 significantly decreased, the level of HbA0 increased ($P < .0.05$). At the same time, the number of ER with increased resistance and the content of 2,3-DPhG in them in-creased, which optimizes the supply of O2 to tissues and its utilization. In patients of 1gr there was a tendency to an increase in the levels of MetHb, HbA1, maximum hemolysis of ER and a shift to the left of the peak of the phase of the maximum hemolysis rate.

Psychoemotional exertion indices (PEI) prior to the start of rehabilitation in the 1gr. and 2gr. were respectively: anxiety – 8.77-8.79, aggressiveness – 4.67-4.64, fear of death – 8.14-8.13, feeling of loneliness – 8.52 -8.53; suicide – 4.38–4.36. After rehabilitation in the 2gr. and 1gr. PEI were: anxiety – 3.52 and 7,33, aggressiveness – 2.32 and 3,98, fear of death – 3.72 and 7,21, feeling of loneliness – 4.27 and 7,35; suicide rates – 2.18 and 3,78 respectively. Before the rehabilitation start 79% of patients 2 gr. and 77% of the 1gr. rated their condition as bad, 12% and 13% – very bad. After rehabilitation in 1gr. 5% of patients indicated poor condition, 51% –satisfactory, 44% – good, in 2gr. 34% of patients reported satisfactory condition, 57% – good and 9% – excellent. In 67% of patients of the 2gr. the doses of β-blockers and calcium channel blockers drugs are reduced while maintaining stable parameters of cardiohemodynamics, 54% of patients stopped taking psychotropic drugs.

Conclusions: Holographic modeling at landscape imaginative kinesiotherapy in combination with mildronate improve cardiohemodynamics, psychological status and blood oxygentransport function in CAD patients with hypertension and anxiety-depressive disorders.

KEY WORDS: CAD, Hemoglobin, Hologram

CHRONIC INFLAMMATION AND ITS ASSOCIATION WITH PLASMA OXALIC ACID IN END-STAGE RENAL DISEASE PATIENTS

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Introduction: Chronic inflammation is considered a characteristic feature of end-stage renal disease (ESRD) and a strong risk factor for both cardiovascular and all-cause mortality in the dialysis population. Unfortunately, although oxalate balance disorders are a common feature in ESRD patients, clinical studies on the relationship between the concentration of oxalic acid and blood cytokines in ESRD patients have not been conducted before.

We hypothesized that xalate imbalances might be involved in chronic inflammation and thus increase the risk of cardiovascular disease (CVD) in ESRD patients.

The aim: Our study aimed to analyze the association between chronic inflammation and oxalate homeostasis metrics in ESRD patients.

Materials and methods: A total of 50 ESRD patients and 23 healthy volunteers were included in this cross-sectional observational study. Among the patients there were 29 hemodialysis and 21 peritoneal dialysis patients.

The study protocol was approved by the local ethics committee of the Institute of Nephrology of the National Academy of Medical Sciences of Ukraine and registered in the international database of clinical trials ClinicalTrials.gov under identification number NCT04399915.

Concentrations of interleukin 6 (IL-6), tumor necrosis factor-alpha (TNF-α) and monocyte chemoattractant protein-1 (MCP-1) were determined in serum using STAT FAX-303 PLUS and commercially available test kits for enzyme-linked immunosorbent assay (ELISA) (Diaclon, France; DRG, Germany; Ukrmedservice, Ukraine) according to the manufacturer's protocols.

The plasma oxalic acid (POx) concentration of oxalate in the blood was determined spectrophotometrically using the reagent Oxalate Assay Kit (MAC-315) (Sigma-Adrich, Spain). Data are presented as median (Me) and interquartile range [Q25-Q75]; nonparametric (U-test) Mann-Whitney was used for comparative analysis. The correlation was determined by the Spearman method.

Results: POx concentration in the examined patients varied from 15.7–116.2 μmol/L and was significantly higher in the ESRD patients compared with the healthy volunteers: 44.05 [27.7-116.2] vs 27.2 [24.1-37.7] μmol/L, $p = 0.003$. The analysis demonstrated a gradually increasing trend in the majority of the examined inflammatory mediators according to the tertiles of POx. The dialysis patients in the upper tertile of POx concentration had higher levels of IL-6, TNF-α and MCP-1 compared with those in the middle and the low tertiles of Pox. The correlation analysis indicated a direct association between POx concentration and blood IL-6 ($r = 0.49$, $p < 0.0001$) and MCP-1 levels ($r = 0.55$, $p < 0.0001$).

Conclusions: Elevated POx concentration is associated with chronic inflammation in ESRD patients.

KEY WORDS: Oxalic acid, chronic inflammation, cytokines.

SOME FIBRINOLYTIC FACTORS FOR DIFFERENTIATION ISCHEMIC CHEST PAIN FROM NON-CARDIOGENIC ONE IN PATIENTS WITH ISCHEMIC HEART DISEASE HISTORY

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Introduction: Chest pain (CP) ranks second place among all emergency department visits. The physicians focus on ruling out acute coronary syndrome (ACS), including unstable angina (UA) as the most life-threatening CP reasons. However, this diagnosis confirms only in 25-40% of hospitalized patients. Musculoskeletal (MS) disorders are another widely-spread but less dangerous reason for CP. The role of fibrinolytic factors, namely tissue plasminogen activator (tPA) and plasminogen activator inhibitor, type 1 (PAI-1) have been discussing regarding both above-mentioned conditions.

The aim was to evaluate the utility of tPA and PAI-1 as diagnostic markers for distinguishing UA and MSD in patients with ischemic heart disease history (IHD).

Materials and methods: In this cross-sectional study, we recruited 72 patients with CP who were hospitalized in the cardiology department with the provisional diagnosis "UA" and IHD history. We followed the guidelines (European Society of Cardiology 2020) for the preliminary diagnosis establishment and management of the patients. However, some patients were continuing complaining of CP despite basic treatment with no dynamic on ECG. For those, we have performed a stress ECG test. Though it was positive, the patients described another character of CP on the peak of exertion. The osteodegenerative changes of the thoracic spine region were registered in all patients of this group on chest X-ray. As the non-steroid anti-inflammatory drugs were helpful for this group of patients and no dynamic on ECG at rest were noted, we discontinued the specific treatment of UA. In general, the full set of investigations included anamnesis taking, physical examination, two-dimensional transthoracic echocardiography, ECG at rest in dynamic, 24-hour Holter monitoring, stress ECG, routine laboratory analysis (complete blood count, basic metabolic panel, troponin I).

Consequently, we defined 2 groups of patients: Group 1 – patients with crescendo UA (n=50), and Group 2 – patients with MS CP and angina history (n=22). The groups were comparable by baseline characteristics.

The whole blood samples for tPA and PAI-1 were collected in sodium citrate and centrifugated. Plasma samples were aliquoted and frozen at -80°C until use. We analyzed the concentrations of tPA and PAI-1 by ELISA (Santa Crus Biotechnology, CA, USA), calculated tPA/PAI-1 and PAI-1/tPA ratios.

We assessed binary logistic models, receiver operating characteristic curves, calculated sensitivity (Se), specificity (Sp), and positive likelihood ratio (LR+) of each indicator.

Results: No diagnostic utility of tPA concentration alone was revealed (P=0.68). PAI-1 concentration and PAI-1/tPA ratio demonstrated a moderate increase (by 15.0% and 14.0%) in UA probability (LR+ 2.30 (1.38, 3.82) and 2.2 (1.39, 3.39), Se 94.0% and 100.0%, Sp 59.1% and 54.5% at cut-off point 0.345 rel.units/ml and 1.596, respectively). TPA/PAI-1 raised MS disorders probability by 69.0% (LR+ Inf (3.43, 897), Se 54.5%, Sp 100.0% at cut-off point 0.654).

Conclusions: PAI-1 concentration alone and tPA/PAI-1 ratio, but not tPA alone demonstrated promising results for differentiation ischemic and non-ischemic CP in patients with IHD.

KEY WORDS: musculoskeletal disorders, crescendo unstable angina, plasminogen activator inhibitor, tissue plasminogen activator.

FROM MEDIZINISCHE POLIZEI TO PUBLIC HEALTH: TEACHING AT THE HIGHER MEDICAL SCHOOL

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Introduction: There are disciplines in medical science that have not changed their name for centuries, but the opposite is also observed.

The aim is to trace how the name of the discipline that is now called "public health" in the Ukrainian higher medical school changed in Ukraine.

Materials and methods: Materials – published historical sources; method – historical.

Results: The term Medical police (Medizinische Polizei) began to be used in German-speaking states in the second half of the 18th century. The Medical police is the empirical science of the forms of state activity in the field of health care. Throughout the 19th century, the Medical police was the subject of teaching in the higher medical school in the Russian Empire, including Ukraine. With the establishment of Soviet power in Ukraine, the Medical police ceased to be taught in medical universities. Instead of it, Social Hygiene appeared in the then programs of Ukrainian universities. This combination of words, as well as the Medical police, was borrowed from the German language - Soziale Hygiene. The change in the name of science was natural. For over 100 years, the Medical police have been enriched by the statistical method. In addition, a theoretical part of this science has appeared, i.e. population health studies at the population level. Thus, it is necessary to distinguish two main periods in the formation and development of the discipline, the name of which is in the title: 1) empirical (medical police); 2) scientific (social hygiene and subsequent changes in the name in Ukraine). In Soviet Ukraine, the departments

of social hygiene appeared in 1923. In 1941, in Ukraine, as well as in the USSR as a whole, the departments of social hygiene were renamed into the departments of healthcare organizations. Here it is important for us to pay attention to the fact that the new name indicated the old content of science, taken from the 18th century, i.e. health system study (health care system). In 1966, in the Soviet Union (and hence in Ukraine), the departments of healthcare organization were renamed to the departments of social hygiene and healthcare organization. In the context of this message, it is important to emphasize that thus the name of the discipline indicated that although it studied health systems (healthcare system), it also had a theoretical component as it studied public health at the population level to create an effective system for providing public healthcare systems. At the same time, in modern science, not only in medicine, English dominates, where the term "Public Health" is used. This term "Public Health" has two meanings: 1) population health; 2) health care (state; public). Therefore, the departments that were once called departments of «social hygiene» in the USSR in the German manner, in a number of post-Soviet countries began to be called departments of «public health and healthcare organizations», but not in Ukraine, where since 2018 they have been renamed into the departments of «громадського здоров'я», which is not a complete translation of the phrase Public Health into Ukrainian, only partially conveying the content of the discipline as a science and subject of teaching. In other words, population health study is not an end in itself of our science. We are engaged in the healthcare system to maintain and improve public health, and therefore it is desirable to emphasize this in the title of our science in Ukrainian. Vocabulary of the world's languages are significantly different from each other. Therefore, in the Ukrainian language one word can be used to designate something, in English two words and vice versa. It seems that the last circumstance must be taken into account when using foreign language terms in the Ukrainian scientific literature and in the names of departments.

Conclusions: Thus, in our opinion, the name of our discipline as a science and subject of teaching in Ukraine requires further clarification.

KEY WORDS: teaching in medical universities, Ukraine, 19-21 centuries.

DYNAMICS OF THE NUMBER AND DENSITY OF PEDIATRICIANS IN UKRAINE, 1993 – 2019

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Introduction: Recent research shows that children's health depends on the number of pediatricians and shows that the regions with the highest infant mortality and morbidity have the lowest number of pediatricians (Beth D. Harper et al., 2019). In this regard, the WHO (World Health Organization**)**
recommends monitoring and to plan the number of pediatricians in accordance with the expected epidemiological changes (prevalence and mortality from infectious diseases among children under 5 years of age), neonatal mortality and chronic morbidity (Kyu HH. et al., 2016; Kanyuka M. et al., 2016).

The aim of the study. To study the dynamics of the number of pediatricians and the density of pediatricians in Ukraine.

Materials and methods: The density of pediatricians was calculated on the basis of the analysis of reporting forms for the period 1993-2019 (forms № 17 "Report about medical personnel") (http://medstat.gov.ua) and data on the of children's number in Ukraine (http: //www.ukrstat.gov.ua). Predictive trends are constructed by regression analysis.

Results: From 1993 to 2019, the number of children in Ukraine decreased by 42% – from 13101056 people to 7579703 people. During this period, the number of pediatricians decreased by 58%from 19,400 people (1993) to 8,133 people (2019). The density of pediatricians per 100,000 children during this period decreased by 27.5% (148.1 in 1993 to 107.3 in 2019), but this figure in Ukraine exceeds the world average (32 (IQR 5 – 74) per 100,000) in 2018 (Beth D. Harper et al., 2019).

In 1993, 45% of pediatricians provided primary care (8,786 people) and 55% of pediatricians provided hospital care (10,614 people). In 2019, 69.6% (2,474 people) of pediatricians provided primary care and 30.4% (5,659 people) of pediatricians provided medical care in hospitals (hospital pediatricians).

The density of pediatricians in hospitals decreased by 7.85% (from 81.02 to 74.66 per 100,000), and the density of pediatricians in primary care – decreased by 51.3% (from 67.6 per 100,000 to 32.64 per 100,000) by serving children by family doctors.

The number and density of pediatricians in Ukraine during 1993 – 2019 has a negative trend. The regression analysis method was used to calculate a density prediction model per 100,000 pediatric population in 2030 for each group of pediatricians. The regression coefficient for the group of pediatricians was $R = 0.7$ ($p < 0.0001$), for the group of primary pediatricians – $R = 0.8$ ($p < 0.0001$), for the group of hospital pediatricians – $R = 0.46$ ($p < 0.01$). If this trend continues, according to the regression analysis in 2030, the density of pediatricians per 100,000 will be 108.95 (–12.4%), of which hospital pediatricians – 72.9 (–5.3%), primary care pediatricians – 36.01 (–23.8%).

Conclusions: In Ukraine, the density of pediatricians during 1993 – 2019 y. has tendency to decrease (–27.5%) on the background of decreasing of children's number (– 42%). By 2030, according to forecasts the density of pediatricians will decrease to 12.4%. When planning the number of pediatricians in Ukraine, the prevalence of pediatric morbidity, the provision of primary health care to children by family physicians, and the optimization of communication between primary care physicians and hospital physicians should be considered.

KEY WORDS: number of pediatricians, density of pediatricians.