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CONTINUING PROFESSIONAL EDUCATION – A PRIORITY DIRECTION OF IMPROVING THE PROFESSIONAL COMPETENCE OF DOCTORS: EXPERIENCE, ACHIEVEMENTS, PROBLEMS AND PROSPECTS

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Ключевые слова: *непрерывное образование, клинический опыт, онлайн-конференция, опрос слушателей*

Abstract. Continuing professional education – a priority direction of improving the professional competence of doctors: experience, achievements, problems and prospects. Pertseva T.O., Kuryata O.V., Konopkina L.I., Bielosludtseva K.O., Stadnichuk G.M. *Continuing education in terms of improving the professional competence of doctors has a great importance. In May 2020 for the first time in Ukraine under conditions of quarantine connected with COVID-19 the Prydniprovsk Association of Internal Medicine Doctors organized a 2-day international conference on internal medicine in a web format. The purpose of the work was to organize, conduct, determine the effectiveness of the international conference of internists in online format and analyze the results of the survey of students. A questionnaire which included 28 test tasks was developed by the lecturers to obtain a feedback. The answers were analyzed and the reasons for possible errors were considered. The level of knowledge acquired by students is generally quite high; however, the most problematic issues were the most modern diagnostic methods in gastroenterology, ECG diagnostics, clinical pharmacology in cardiology and pulmonology. The prospect of developing a system of continuing professional education for internists is to improve teaching methods with the subsequent involvement of leading specialists in various therapeutic areas to cover current issues of medical science and practice.*

Реферат. Непрерывное профессиональное образование – приоритетное направление повышения профессиональной компетентности врачей: опыт, достижения, проблемы и перспективы развития. Перцева Т.А., Курята А.В., Конопкина Л.И., Белослудцева К.О., Стадничук Г.М. *Непрерывное образование в разрезе повышения профессиональной компетентности врачей приобретает немалое значение. В мае 2020 года впервые в Украине в условиях карантина в связи с COVID-19 Общественной организацией «Приднепровская ассоциация врачей-интернистов» было организовано проведение в веб-формате 2-дневной международной конференции по вопросам внутренней медицины. Целью работы было организовать, провести, определить эффективность проведения международной конференции врачей-интернистов в онлайн-формате и проанализировать результаты опроса слушателей. Для получения обратной связи лекторами была разработана анкета, в которую вошли 28 тестовых заданий. Ответы были про-*

анализированы, рассмотрены причины возможных ошибок. Уровень усвоенных слушателями новых знаний в целом достаточно высок; впрочем, наиболее проблемными оказались вопросы современных методов диагностики в гастроэнтерологии, ЭКГ-диагностики, клинической фармакологии в кардиологии и пульмонологии. Перспективой развития системы непрерывного профессионального образования для врачей-интернистов является усовершенствование методов обучения с последующим привлечением ведущих специалистов по различным терапевтическим направлениям к освещению актуальных вопросов медицинской науки и практики.

The concept of continuing education, which nowadays is increasingly attracting the attention of the world community is not new. It first received its scientific justification in the 60s of the twentieth century. Among the prominent theorists of this problem, the leading French thinker and philosopher of education, Paul Lengrand occupies a leading position. Unfortunately, in our country almost nothing is known about his activities and merits. The main provisions of P. Lengrand's concept are set out in the monograph "Introduction to Continuing Education", which was published in 1975 [11]. It is since then that the ideas of continuing education in various fields of science and practice have quickly won their supporters and acquired various forms [1, 2, 3, 7, 8, 10, 12].

Paying tribute to many scientific schools, it should be noted that the question of the relevance of continuing education in terms of improving the professional competence of doctors today is gaining considerable importance. This is due to the fact that medical technology is constantly changing, developments and knowledge are constantly updated, the results of basic research complement existing information, often changing our perceptions of certain processes in the human body, and clinical experience requires careful analysis and deep and comprehensive rethinking.

One of the methods of updating the knowledge of both practitioners and medical scientists is to involve them in various scientific and practical events: conferences, symposia, congresses, meetings, seminars, workshops, round tables and others. After all, it is in the circle of like-minded specialists that one can gain new knowledge, discuss complex issues, join the basics of world practice, touch on unresolved issues and, finally, change existing paradigms.

Unfortunately, in the context of the global coronavirus disease-19 pandemic (COVID-19), many interventions have proved impossible. However, a meeting of specialists in online format with a good video broadcast can have many advantages: one-time involvement in the audience of a large number of listeners from different regions and even countries, saving time of participants for arrival-departure, the possibility to ask lecturer any question in chat and get an answer to it, and if necessary – to review any lecture or report recorded and presented on Internet platforms.

Thus, the purpose of our work was to organize, conduct, determine the effectiveness of the international conference of internists in online format and analyze the results of the survey of listeners to determine the level of new knowledge they learned while listening to lectures and reports.

In May 2020, for the first time in Ukraine in the conditions of quarantine due to COVID-19, the Public Organization "Dnipro Association of Internal Medicine Doctors" organized a web-based 2-day international conference on internal medicine.

The conference was held in two directions. During the first and second days, scientific lectures and reports on topical issues of theoretical medicine in pulmonology, cardiology, rheumatology, gastroenterology, endocrinology, hematology, general practice – family medicine, allergology, nephrology, phthisiology, and during the second days – also trainings on development of practical skills in various spheres of practical medicine are carried out. Most of the domestic lecturers and speakers are leading specialists of the Dnipropetrovsk Medical Academy of the Ministry of Health of Ukraine.

To obtain feedback from the students, as well as to determine the level of new knowledge they have acquired and to clarify the most problematic issues of internal medicine, a questionnaire was developed by the lecturers which included 28 test items. 5 distractor answers were added to each task, and respondents had to choose only one correct answer.

The analysis of the answers to the test tasks was performed using the methods of biometric statistics [5], after which the answers to each task were carefully analyzed and the causes of possible errors were considered.

To participate in the conference as listeners on a special web platform, the program of the event was set out in advance. During next 3 days 4750 potential participants were registered, of which: 4484 (94.4%) – residents of Ukraine, 74 (1.6%) – residents of the Republic of Belarus, 87 (1.8%) – residents of the Republic of Moldova, 47 (1.0%) – the Republic of Kazakhstan and 58 (1.2%) – the Republic of Uzbekistan. Such a large number of people wishing to take part in the forum testifies to

the high interest of internists in the subject of the event, and not only in Ukraine.

The first section on the first day of the conference was devoted to the issues of pulmonology, within which lectures were given by the corresponding member of the NAMS of Ukraine T.O. Pertseva and professors E.M. Dityatkovskaya and L.I. Konopkina (Dnipro), co-authors of the reports were associate professors T.V. Kireeva and K.O. Belosludtseva. The following lecture blocks concerned modern algorithms for the treatment of osteoarthritis (lecturers – professors Olivier Brewer from Belgium and M.F. Soroka from the Republic of Belarus) and issues of modern gastroenterology (lecturers – professors Y.M. Stepanov (Dnipro), I.M. Skrypnyk (Poltava), O.E. Gridnev (Kharkiv) and S.I. Tsurkan from the Republic of Moldova). During the plenary session on various issues of internal medicine, professors N.O. Pertseva and O.V. Kuryata (Dnipro), S.M. Koval (Kharkiv), M.N. Selyuk and E.O. Trufanov (Kyiv) spoke. Within the section "Systemic connective tissue diseases" reports were presented by the expert of DHC DRSA in the field of "Rheumatology" T.K. Lysunets and professors IS Borisova and O.V. Kuryata (Dnipro), and within the section "Actual issues of nephrology" – associate professor E.O. Frolova and candidate of medical science NV Khomiak (Dnipro). The duration of the first working day was 11 hours and 54 minutes, the maximum number of listeners who were simultaneously connected in the online format – 1.1 thousand people, the average duration of one viewing (single login) – 42 minutes, and the number of online platform visits – more than 13 thousand.

The second day of the conference was devoted to the problems of comorbidity in internal medicine, cardiovascular disease and some issues of general practice - family medicine. Lectures were given by professors O.Yu. Filipova, O.V. Kuryata, T.V. Kolesnik, O.O. Khanyukov, O.A. Koval, V.A. Potabashnyi, R.V. Razumnyi, I.L. Vysochyna, associate professors Yu.S. Kushnir, T.V. Yudina, N.S. Kolisnyk and DHC DRSA expert in the field of "Rheumatology" T.K. Lysunets from Dnipro, and Professor D.A. Lashkul from the city of Zaporizhzhia. Trainings on mastering practical skills were conducted by professors V.A. Potabashnyi, O.O. Khanyukov, L.I. Konopkina, K.Yu. Gashinova, T.V. Kolesnik, N.O. Pertseva, Doctor of medical science T.P. Nikolaenko-Kamyshova, expert T.K. Lysunets (Dnipro). The duration of the second working day was 11 hours and 47 minutes, the maximum number of listeners who were simultaneously connected in the online format – 762 people, the average duration of one viewing (single login) – 41 minutes, and the number of online platforms visits – 9.4 thousand.

A feature of our conference was the organization of sections of poster presentations, including a competition for young scientists.

2161 people who listened to the conference material (45.5% of the number of registered), expressed a desire to obtain a certificate of the listener, for which they were asked to check the acquired knowledge and provide answers to 28 test questions online which were developed by lecturers. At least 17 correct answers were chosen as the criterion for this type of work.

The results of the analysis of the respondents' answers showed the following.

Respondents were asked 5 questions about coronavirus disease (COVID-19) and associated pneumonia. The results showed that, despite some difficulties in perceiving information about COVID-19, as well as the constant variability of our perceptions of the ways of formation of this pathology and not yet fully understood processes occurring in the lungs of patients, the formulation of clinical diagnosis was correctly determined by a large number of respondents – 81.0%. At the same time, every 9th doctor (89.8%) correctly determined the indications for polymerase chain reaction (PCR) for the presence of coronavirus SARS-CoV-2. A slightly less number of listeners (68.5%) correctly answered the questions about the initial antibiotic therapy for viral and bacterial pneumonia against the background of COVID-19, noting protected amoxicillin, but regarding alternative antibiotic therapy – opinions were too different, and only 37,0% of respondents gave the correct answer. The latter indicates the need, on the one hand, to constantly monitor the effectiveness of antibiotics of different pharmacological groups in different categories of patients with coronavirus disease, and on the other – the need for constant updating of our knowledge about this largely unexplored pathology.

Regarding anticoagulant therapy for COVID-19, the correct answer was given by slightly more than half of the respondents – 57.2%: most likely, not all respondents understood the question correctly, as it was about all possible options for thrombosis prevention, namely: introduction of heparin or low molecular heparins or the use of devices for mechanical thromboprophylaxis in the presence of contraindications to drug prophylactic actions.

Thus, a fairly large number (in general) of correct answers to the question about coronavirus disease and pneumonia developing against its background indicates that today many internists are interested in this problem, despite the fact that not all of them

treat the above-mentioned category of patients. Doctors not only try to follow the information provided in regulatory documents (orders), presented in special literature and discussed by global and national experts (at webinars, online meetings, conferences, etc.), but also listened carefully to lectures that were delivered at our event.

Regarding drugs that must be included in the treatment programs of patients with chronic obstructive pulmonary disease (COPD), only two of the three specialists (62.1%) gave the correct answer – "bronchodilators". Unfortunately, one out of four physicians (25.7%) chose the answer "inhaled glucocorticosteroids" (ICS). It should be noted that such a solution, in the end, is better than choosing any other wrong distractor. However, it should be remembered that inhaled corticosteroids are not recommended for use in the treatment of all patients with COPD, but only those who belong to clinical group "D". It was unexpected to see that about 7% of physicians chose phosphodiesterase-4 inhibitors as mandatory therapy for COPD, and about 5% – mucolytics or macrolide antibiotics, because these drugs are used only in certain categories of patients and only under certain conditions. Recommendations for the treatment of COPD patients belonging to different clinical groups are clearly set out in both the European standard GOLD-2020 [9] and the national document [4], and, if necessary, experts can get acquainted with them once again.

When asked about the clinical problem of the mechanism of disease development in pain in the hip and knee joints, 75.7% of respondents gave the correct answer, noting "degenerative changes in cartilage", 17.7% mistakenly perceived the situation as related to the deposition of pyrophosphate calcium crystals, and 6.6% of respondents gave other, unfortunately, incorrect answers. Most likely, it was difficult for doctors to make a differential diagnosis between osteoarthritis and pseudogout ("chondrocalcinosis", "pyrophosphate arthropathy"). It should be recalled that osteoarthritis is characterized by inflammation in the affected area and metabolic disorders in cartilage, resulting in narrowing of the joint space and the formation of osteophytes, clinically it is manifested by pain and later – by crunch. Most likely, the doctors did not pay attention to the characteristic clinical signs and radiological changes of the female patient, whose clinical situation was described in the test task. We concluded that in the future, considering clinical problems at conferences or workshops, we will pay much attention to various problems of joint pathology.

Regarding the diagnostic method, which can most accurately make a differential diagnosis between steatosis and steatohepatitis of the liver, 61.4% of doctors correctly indicated the need for organ biopsy. However, 16.5% of respondents preferred elastography, 13.5% – steatometry, and 8.6% (in total) – hepatic complex or ultrasound of the abdominal cavity. In the end, it is good that doctors are aware of the possibility of using modern diagnostic methods in hepatology, such as elastography or steotometry, but liver biopsy in this situation is still the most accurate method.

A more complicated situation was revealed with the definition of factors that participate in the mechanisms of formation of non-alcoholic fatty liver disease - the audience was divided into almost identical three parts: 38.2% of doctors indicated the correct answer "disorder of the intestinal microbiome", 28.7% – erroneously chose "disorder of bilirubin capture by hepatocyte microsomes", and 31.1% (total) – erroneously indicated other reasons (cholecystokinin-releasing factor (17.4%) and activation of RAAS (13.7%)). Thus, it turned out that only a third of doctors focus on this problem. In addition, unfortunately, 2% of respondents also chose the distractor "alcohol factor", although the question sounded like the phrase "non-alcoholic fatty liver disease"; probably, the respondents were inattentive.

Somewhat unexpected were the answers to the questions about the first line in the treatment of patients with type 2 diabetes mellitus in accordance with the recommendations of the American Diabetes Association (ADA-2020) [6]. Thus, 66.9% of physicians answered "lifestyle modification and metformin", and 23.5% – indicated only metformin, thus "removing" from the answer the phrase "lifestyle modification". We believe that hardly anyone today doubts the need to modify the lifestyle of diabetics – most likely, some of the doctors just mistakenly paid more attention to the drug, not paying attention to the fact that the answer, where it sounds "modification of lifestyle" also refers to metformin. Be that as it may, more than 90% of internists, we think, will prescribe metformin, and this is not bad.

It is nice to note that a fairly large percentage of respondents (86.5%) correctly consider methylprednisolone to be the safest glucocorticoid in the treatment of rheumatoid arthritis (RA), and almost as many doctors (83.4%) consider the method of determining antibodies to cyclic citrulline peptide the most reliable in the diagnosis of RA. All this testifies to the high awareness of internists on some topical issues of rheumatology.

More complicated the test task was about the method of diagnosis, being necessary for establishing a clinical diagnosis of a female patient who after rest at sea had pain in the elbow joints, hyperthermia, shortness of breath and weakness, erythema on the bridge of the nose, ulcer on the mucous membrane of the lips – ulcer, and objectively began to listen to the noise of friction of the pleura and the rhythm of the gallop. Only a little more than half of the respondents (55.2% of doctors) correctly chose the answer "detection of antibodies to native DNA". Unfortunately, a third of specialists (34.4%), probably thinking about rheumatic fever, mistakenly chose the distractor "blood for antistreptolysin O, rheumatoid factor", 10.4% of respondents chose other answers ("antibodies to cardiolipin", " immunological analysis of blood "," creatinine phosphokinase "), but they are also erroneous.

In chronic kidney disease, which is accompanied by moderate proteinuria, 65.3% of physicians correctly chose the answer "angiotensin-converting enzyme inhibitors (ACE inhibitors) or angiotensin II receptor blockers (ARBs)" as the basis for antihypertensive therapy. At the same time, 22.3% of specialists mistakenly chose "ACE inhibitors and ARBs", and 12.4% (in total) – "beta-blockers", "calcium channel blockers" and "diuretics".

For the treatment of patients with uncomplicated pyelonephritis, 75.4% of specialists correctly chose fluoroquinolones (ciprofloxacin) as first-line drugs, as such treatment is regulated by the recommendations of the European Urological Society (2018). However, 19.8% of physicians mistakenly preferred protected penicillins (amoxicillin/clavulanate) and 4.8% (total) preferred aminoglycosides, carbapenems, and macrolides.

The question of planned treatment and prevention of complications in acid-dependent diseases was simple for doctors – 87.5% of them chose the correct answer – "omeprazole", and only 12.5% of respondents (in total) made a mistake by choosing “aluminum and magnesium hydroxide", "ranitidine", "alginic acid salts" or “famotidine".

But the question of "basic" drugs for the treatment of osteoarthritis was, on the contrary, difficult – only 41.2% of doctors gave the correct answer, choosing "slow-acting anti-inflammatory drugs." 50.5% of specialists chose "nonsteroidal anti-inflammatory drugs", 8.3% (total) – "glucocorticoids", "gold preparations" and "cytostatics".

71.8% of respondents believe that pantoprazole has the lowest risk of interaction with other drugs among all proton pump inhibitors means. 12.2% indicated omeprazole, 7.1% indicated rabeprazole and esomeprazole, and only 1.8% indicated lansoprazole.

96.2% of physicians, when asked about the possible cause of myocardial ischemia, correctly chose the statement "all answers are correct", which meant vasospasm, high heart rate, coronary stenosis, and coronary artery thrombosis. Here the discussion, as they say, is needless.

The question of prescribing drugs to patients with coronary heart disease and comorbid hypertension was quite difficult, and only 44.8% of respondents gave the correct answer. Despite the fact that there are quite a lot of patients with such a combination of diseases in the practice of a family doctor, and therefore they often have to solve problems of combining drugs of different pharmacological groups, however, even cardiologists admit that the problem in literature is not covered often, and sometimes incompletely. In view of this, the issues of clinical pharmacology in cardiology need even wider discussion at various forums.

In the test task for the selection of a diagnostic marker of heart muscle damage in a 27-year-old patient who complains of sore throat, general weakness, shortness of breath during exercise with negative T wave in the leads V_1–V_3 on the electrocardiogram, the vast majority of experts (75.5%) correctly chose the answer "troponin T". 11.9% of respondents chose the wrong answer "creatine phosphokinase", and the remaining 12.6% (total) – the same incorrect answers "myoglobin", "D-dimer", "NT-proBNP".

78.4% of doctors consider the main causes of chronic cough in adults to be "drip syndrome", bronchial hyperreactivity, gastroesophageal reflux disease. If we add 11.8% of respondents who mentioned "chronic diseases of the ENT organs" (because they are, for the most part, lead to the formation of "drip-syndrome", which is characterized by chronic cough), it turns out that doctor-internists in the management of this category of patients can not go without otolaryngologists. And this is absolutely correct. This is exactly the tactic that a doctor of therapeutic specialty must follow.

Regarding the indications for hospitalization of a patient with an acute cough, almost all physicians surveyed (over 90%) correctly identified it as "oxygen saturation <92% or central cyanosis (if the person has no history of chronic hypoxia)".

But the answers to the test task about the research method, which is not used to verify renal tuberculosis in a patient who has been suffering from disseminated pulmonary tuberculosis for 2 years, turned out to be completely unexpected. Thus, only 17.0% of physicians correctly indicated "bacterioscopy of urine for acid-resistant bacteria", the rest chose "immunological tests (tuberculin testing, tests

for the release of gamma-interferon, etc.)" (29.9%), and “urine culture for Mycobacterium tuberculosis” (18.6%), and “radiological” (17.4%), and “ultrasound” (17.2%). Probably, it was just a technical mistake of the respondents, who did not pay attention to the particle "no" in the question, so the answers were distributed among all distractors.

75.3% of people correctly believe that gastrointestinal disorders such as "functional dyspepsia and irritable bowel syndrome" are the most common in the syndrome of cross-functional disorders. Unfortunately, 14.8% of respondents, believing that it is "irritable bowel syndrome and abdominal pain syndrome", and 9.9% of respondents, indicating (in total) "abdominal pain syndrome and gastritis" , "functional dyspepsia" and "functional dyspepsia and constipation" were wrong.

Respondents' answers to questions about electrocardiographic changes in a patient with acute coronary syndrome and a positive troponin test were somewhat ambiguous. It is very good that internists understood the essence of the problem, and 98.2% of them immediately ruled out the diagnosis of unstable angina, clearly realizing that the test task is an acute myocardial infarction. However, unfortunately, only 26.9% of specialists were able to determine the prevalence of the pathological process (Q-, not Q-myocardial infarction) and its localization. In addition, physicians are most likely ill-informed about the reciprocal disorders indicated in the problem. We believe that this issue is not easy for a doctor of any specialty, so in the future we will plan conferences, seminars and workshops on electrocardiographic changes in various pathological conditions and diseases.

89.0% of physicians rightly believe that COPD is not a risk factor for stroke, transient ischemic attack, or systemic embolism on the CHA2DS2-VASc scale, whereas hypertension, any vascular disease, chronic heart failure, and diabetes are . It is good that doctors not only know about this, but also, we hope, realize it; therefore, we think that the right work is carried out with patients both in terms of prevention and in terms of treatment.

Three quarters (75.0%) of respondents named the correct target level of uric acid in the treatment of gouty arthritis – 300-360 μmol/l, the rest of the respondents were wrong. This question is factual, i.e. it requires specific knowledge, not logical reflections on this topic. You just have to remember the level of the indicator.

Thus, the results of questionnaire of the conference participants showed that 71.2% of respondents (1538 out of 2161 people) gave the correct answer to at least 17 out of 28 test tasks and received a certificate of participation. Unfortunately, 623 physicians (28.8%) provided less than 17 correct answers; most likely, they either inattentively listened to the lectures or did not listen all the lectures they, and in the end did not receive the certificate of participation.

Thus, the international conference for internists organized and conducted by us in the online format, as well as the analysis of respondents' answers to test tasks allowed us to formulate several key conclusions:

1) the topic of the international conference for internists, held online, caused great interest not only in Ukraine but also in other countries - the Republic of Belarus, the Republic of Moldova, the Republic of Kazakhstan and the Republic of Uzbekistan;

2) the materials presented at the conference allowed the listeners to increase their level of knowledge in various medical disciplines and improve their professional competence;

3) the level of new knowledge acquired by the listeners in general is quite high;

4) the most problematic issues were the most modern diagnostic methods in gastroenterology, traditionally - in relation to ECG diagnostics, as well as clinical pharmacology in cardiology and pulmonology;

5) the prospect of developing a system of continuing professional education for internists is to improve teaching methods with further even greater involvement of leading experts in various therapeutic areas to cover current issues of medical science and practice.

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