

Morokhovets H. Yu., Purdenko T. Y., Ostrovska L. Y., Lysanets Yu. V.

Ukrainian Medical Stomatological Academy, Poltava

**EVIDENCE-BASED MEDICINE AS A MODERN METHODOLOGY OF
HEALTHCARE**

У статті простежено основні етапи становлення доказової медицини в Україні та світі. Досліджено принципи використання науково-медичної інформації і рівні доказовості в процесі діагностики та лікування. Проаналізовано результати діяльності Кокранівського співтовариства і міжнародних проблемних груп, спрямовані на створення, систематизацію й оновлення інформації щодо профілактики, лікування і реабілітації пацієнтів. Розглянуто методологічний потенціал сучасних електронних ресурсів доказової медицини в контексті підготовки здобувачів вищої освіти ступенів доктора філософії та доктора наук.

Ключові слова: доказова медицина, діагностика, лікування, охорона здоров'я, доктор філософії.

The article focuses on the main stages in the development of evidence-based medicine in Ukraine and in the world. The principles of using scientific and medical information and the levels of evidence in the process of diagnostics and treatment have been studied. The results of the activity of the Cochrane community and international problem groups, aimed at formation, systematization and updating of information on prevention, treatment and rehabilitation of patients have been analyzed. The methodological potential of modern electronic resources of evidence-based medicine in the context of training Ph.Ds and doctoral degree candidates has been considered.

Key words: evidence-based medicine, diagnostics, treatment, healthcare, doctor of philosophy.

В статье прослежены основные этапы становления доказательной медицины в Украине и мире. Исследованы принципы использования научно-медицинской информации и уровни доказательности в процессе диагностики и лечения. Проанализированы результаты деятельности Кокрановского сообщества и международных проблемных групп, направленные на создание, систематизацию и обновление информации по профилактике, лечению и реабилитации пациентов. Рассмотрен методологический потенциал современных электронных ресурсов доказательной медицины в контексте

подготовки соискателей высшего образования степеней доктора философии и доктора наук.

Ключевые слова: *доказательная медицина, диагностика, лечение, здравоохранение, доктор философии.*

The adoption of the Law of Ukraine “On Higher Education” [3] introduces changes into the process of training Ph.D. students in healthcare and medicine. Postgraduate study strongly relies on implementation of individual educational and scientific plans, which includes the content module “Methodology of scientific and patent search”. The relevance of this content module is determined by the diversity of scientific research methods, clinical research results, preventive, diagnostic and therapeutic measures.

Evidence-based medicine is the latest methodology for collection, analysis and synthesis, as well as application of scientific medical information, which allows doctors to make optimal clinical decisions [1]. For a long time, generally accepted methods of treatment and medical traditions have not been subjected to adequate scientific evaluation, which led to the emergence of the “golden standard of therapy”, “drug of choice” – the ideas that increase the effectiveness of medicine in general. Thus, the term “evidence-based medicine” was introduced into the scientific use by a group of Canadian scientists from McMaster University in 1990 [2; 7]. The very concept of new clinical thinking in the process of forming a new field of medical knowledge – clinical epidemiology – arose in the 1980’s. Today, evidence-based medicine, as a modern technology for collection, analysis, synthesis and application of scientific medical information, is widely used in daily medical practice [6; 9].

In the process of evidence-based medicine formation, the following directions of medical science have been established: pharmacoepidemiology, new directions of pharmacoinformatics, pharmacoconomics, pharmacogenetics, pharmacogenomics [5]. The development of evidence-based medicine in Ukraine is due to the financing conditions nowadays. In 2017, the healthcare of Ukraine was allocated with 2.8% of gross domestic product [4] (according to the World Health Organization, this figure should reach 6-8%). Financing of the healthcare sector is limited in many developed countries as well. Thus, according to the data of the State Institution “Institute for Strategic Studies of the Ministry of Public Health of Ukraine”, the share of financing of health care in the European region in 2006-2013 fluctuated within the range of 6.4-7.6%, while in the world – 8.7-10.4%. Consequently, the limited financial resources allocated to the healthcare sector, and the

constant need for costs lead to the problem of choosing evidence-based medicine as a cost-cutting medical technology with proven effectiveness, which increases the effectiveness of treatment.

Evidence-based medicine strongly relies on testing the effectiveness and safety of diagnostic, prophylaxis and treatment techniques in clinical trials. Thus, the use of data obtained from clinical trials in the doctor's daily work is the basis of evidence-based medicine.

In most countries, there are certain rules for conducting clinical trials, which have become universally accepted:

- the GCP standard (Good Clinical Practice);
- rules for manufacturing the medicinal products (GMP standard – Good Manufacturing Practice);
- rules for laboratory research (GLP standard – Good Laboratory Practice).

The basic principle of evidence-based medicine is as follows: each clinical decision must be based on scientific facts, which are statistically proved on a large representative group of patients; no new medical technology (new method of treatment, diagnosis, prevention) can be recognized without mandatory testing in the context of randomized controlled trials.

The “gold standard” of evidence-based medicine is a randomized, controlled study, aimed at improving the quality of medical care, taking into account safety and cost, optimization of health system activity.

Another important method is meta-analysis – statistical synthesis of quantitative results of several studies devoted to the same issue. The results of clinical trials and the conclusion of meta-analysis conducted on their basis are widely used when developing clinical protocols and recommendations. Clinical guideline is a systematic development of provisions that help a practitioner and patient to make the right decision in a specific clinical setting.

Currently, in most countries of the world, the International Regulations for Medical Research – GCP (Good Clinical Practice) has been established, which guarantees the reliability of the results of various pharmacotherapy methods and protects the rights of subjects in clinical trials – patients. A number of international journals on this subject are published: “Clinical Evidence”, “Evidence Based Medicine”, “ACP Journal Club”. These electronic resources include literature reviews, clinical guidelines, clinical research results, etc. Thus, the request for “patients with mental disorders” on the website of journal “Clinical Evidence” gave over

100 system reviews; the request for “patients with allergic diseases” – 232 results according to the website of “ACP Journal Club”.

The system of evidence-based medicine has become widespread in the world – and the number of international organizations on particular issues is increasing as well. The largest international organization is the International Cochrane Collaboration, which gathers and summarizes the most reliable evidence from research to help the stakeholders (doctors, nurses, patients, researchers and funders) use high-quality information, make health decisions and informed choices about treatment. Cochrane contributors (37,000 from more than 130 countries) work together to produce credible, accessible health information [8]. Cochrane's work is based on ten key principles: Collaboration; Building on the enthusiasm of individuals; Avoiding duplication of effort; Minimizing bias; Keeping up-to-date; Striving for relevance; Promoting access; Ensuring quality; Continuity; Enabling wide participation [8].

Thus, evidence-based medicine is an approach to medical practice where decisions about the use of prophylactic, diagnostic and therapeutic measures are made on the basis of available evidence of their effectiveness and safety, and such evidence is searchable, comparable, generalized and widespread for use in the interests of patients. It is a feasible tool in the context of training Ph.Ds and doctoral degree candidates, which needs further research.

REFERENCES

1. Власов В. В. Введение в доказательную медицину / В.В. Власов. – М. : Медиа Сфера, 2001. – 392 с.
2. Двойрин В. В. Методика контролируемых клинических испытаний / В. В. Двойрин, А. А. Климентов. – М. : Медицина, 1985. – 144 с.
3. Закон України “Про вищу освіту” [Електронний ресурс]. – Режим доступу : <http://zakon3.rada.gov.ua/laws/show/1556-18>
4. Закон України “Про Державний бюджет України на 2017 рік” [Електронний ресурс]. – Режим доступу : <http://zakon5.rada.gov.ua/laws/show/1801-19>
5. Кайдашев И. П. Эволюционирование и современное состояние фармакогенических исследований (часть I) / И. П. Кайдашев, О. А. Шлыкова, О. В. Измайлова // Проблемы экологии и медицины. – Полтава. – 2010. – №5-6. – С. 3 – 12.
6. Основи доказової медицини / За ред. М. П. Скакун. – Тернопіль : Укрмедкнига, 2005. – 244 с.
7. Флетчер Я. Клиническая эпидемиология. Основы доказательной медицины / Я. Флетчер, С. Флетчер, З. Вагнер. – М. : Медиа Сфера, 1998. – 352 с.
8. The Cochrane Collaboration [Електронний ресурс] / Режим доступу: <http://www.cochrane.org>
9. Goodman S. N. Toward evidence-based medical statistics: The Bayes factor / S. N. Goodman // Ann Intern Med. – 1999. – Vol. 130. – P. 1005–1013.