WISSENSCHAFTLICHER ANSATZ IN DER MEDIZINISCHEN AUSBILDUNG: ENTWICKLUNG EINER PROGNOSTISCHEN KARTE DER KRANKENENTWICKLUNG

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Anmerkung. Der Artikel befasst sich mit den Fragen der Forschungsarbeit von Studierenden, der Rolle der wissenschaftlichen Tätigkeit bei der Vorbereitung hochqualifizierter Fachkräfte. Die entwickelte prognostische Karte und Merkmale ihrer Anwendung in der Praxis werden ebenfalls beschrieben.

Schlüsselwörter. Medizinische Ausbildung, wissenschaftliche Tätigkeit, prognostische Karte, Risikofaktoren, Programm.

SCIENTIFIC APPROACH IN MEDICAL EDUCATION: DEVELOPMENT OF A PROGNOSTIC MAP OF DISEASE DEVELOPMENT

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Annotation. The article deals with the issues of research work of students, the role of scientific activity in the preparation of highly qualified specialists. The developed prognostic map and features of its application in practice are also described.

Keywords. Medical education, scientific activity, prognostic map, risk factors, program.

Relevance. The most important task of modern medical education is the preparation of a qualified medical worker of the appropriate level and profile, competitive in the labor market, competent, responsible, fluent in his profession and oriented in related fields of activity, capable of effective work in his specialty at the level of world standards, ready for permanent professional growth and professional mobility. Improving the quality of education depends on many reasons: the presence of a highly qualified scientific and pedagogical staff, material, technical and laboratory support of universities, and is also determined by how disciplines are taught.

In accordance with the modern concept, a medical higher educational institution should be a branch educational and scientific center. Science will not develop if research is not carried out in this area of knowledge, there is no theoretical substantiation of applied research, their experimental

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verification, and the development of a mechanism for implementation in the relevant industry.

An important factor predisposing to increasing the scientific potential of students is also direct contact with the achievements of scientific and technological progress. It is largely due to the nature and intensity of research work carried out by teachers. The search for new ways of research usually begins in their student years through their participation in scientific circles. From year to year, this search takes more and more real contours of knowledge of the essence of the pathological process. During this time, they learn the principles of continuous work with medical literature, as well as acquire skills for the analysis of clinical material.

Of particular practical importance are the skills of a specialist to adequately perceive complex situations in life, assess them correctly, quickly adapt to new cognitive situations, purposefully process the available information, search for and supplement it with missing information, know the patterns of its optimal use, predict the results of activities using their intellectual and creative potential. ...

Correctly organized and planned research work of students in the learning process performs a number of functions: educational, organizational and orientational, analytical and corrective, motivational, developing, upbringing.

One of the important tasks in the process of medical education is to attract students to research activities. It is necessary to develop knowledge and skills in disease prevention and early diagnosis in the training of general practitioners.

Purpose of the study. The aim of the study is to develop scientific activities aimed at early detection of diseases in cooperation with students.

Materials and research methods. At the first stage of the study, in the family polyclinic, together with the students, the analysis of the patient's medical records and the identification of risk factors were carried out. The first group of students, using the method of rationing of intensive indicators (NIP) by E. N. Shigan, developed prognostic matrices based on the revealed data. The second group determined the possible range of risk values for the complex of the factors taken. The third group developed an electronic program on the basis of the developed map. The next stage of the study included the use of the developed electronic map and determination of the risk of developing diseases of the gastrointestinal tract among the attached population in the primary health care level.

Results and discussion.

At present, computational methods have been developed for the diagnosis and prediction of a number of somatic diseases, however,

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prediction of the development of pathological changes in patients with chronic diseases has not been carried out.

In our opinion, identification of risk factors for the development of pathological insufficiency in patients by comparing various prognostic criteria is very important in the prevention of chronic diseases of the gastrointestinal tract. Using the method of normalization of intensive indicators (NII) by E. N. Shigan, which is based on the probabilistic Bayesian method, prognostic matrices were developed based on anamnesis data and clinical symptoms.

The first group of students to compile a prognostic table received comparable indicators of the predicted phenomenon according to the gradations of the most important factors. The significance of the factors and their gradations was determined by using the relative risk indicator (R). This indicator is the ratio of the maximum intensity indicator (c) to the minimum (d) within each individual factor (R = c / d).

If the factor has no effect, then it is equal to one. The higher R, the greater the significance of the factor for the occurrence of this type of pathology.

The essence of the method lies in the fact that instead of the usual intensive indicators, NII is used, which can be calculated by the formula: N = r / M, where: N is the normalized intensive indicator (NII), r is the intensive TL indicator with C per one hundred examined, M - "Normalizing indicator".

In this case, the average frequency of chronic morbidity (CC) with secretory insufficiency according to the data of the entire study (per 100 subjects) is taken as a normalizing value. For example, in patients, the incidence of secretory insufficiency (r) was 46.7, and NP with secretory insufficiency was 54.5. The same indicator among all surveyed was 51.0. This value was taken as a "normalizing" indicator (M). Substituting the corresponding values in the above formula, we obtained the following normalized intensive indicators: in patients with NII1 = 46.7 / 51.0 = 0.934, and CP with secretory insufficiency - NII2 = 54.5 / 51.0 = 1.069. Relative risk index (R) = 1.032 / 0.934 = 1.167.

NIIs for all other risk factors were calculated in a similar way. The obtained NIIs are the initial standard with which it is possible to give an integrated assessment of the risk of developing signs in patients with chronic bronchitis, both for a separate factor and for their complex.

As you know, factors have different strengths of influence on the development of secretory insufficiency in patients with chronic bronchitis. Therefore, we took into account the value of the relative risk indicator for each factor. Knowing the indicator of the relative risk (R) of the onset of

10.5281/zenodo.5205500

the disease and the normalized intensive indicator (N), it is possible to determine the strength of the influence on the development of secretory insufficiency in patients of each individual factor, i.e. predictive coefficient (X).

This value is defined as follows: X = R · N, where X is an integrated indicator of risk from the strength of the influence of a particular factor (prognostic coefficient); N - NII for the development of secretory insufficiency in patients with CP; R is an indicator of relative risk.

If we take into account that in our example the indicator of relative risk (R) was 1.17, NIP1 - 0.916, NII2 - 1.069, then the integrated indicator of the strength of influence of each individual factor, i.e. predictive coefficient was:

Table 1. Prognostic map for a comprehensive assessment of the risk of development

Risk factors		%	NII	R	X		
						min	max
Past diseases of the gastrointestinal tract	there is	73,1	0,571	2,505	1,429	1,429	3,582
	No	29,2	1,429		3,582		
Alcohol consumption	there is	69,2	0,667	2,000	1,333	1,333	2,667
	No	34,6	1,333		2,667		
Nicotine smoking	there is	26,9	0,727	1,750	1,273	1,273	2,227
	No	15,4	1,273		2,227		
Organ damage resulting from abdominal trauma	there is	55,8	0,389	4,143	1,611	1,611	6,675
	No	13,5	1,611		6,675		
Surgical interventions	there is	34,6	0,500	3,000	1,500	1,500	4,500
	No	11,5	1,500		4,500		
Uncontrolled intake of medications that aggressively affect the gastrointestinal tract	there is	48,1	0,276	6,250	1,724	1,724	10,776
	No	7,7	1,724		6,250		

10.5281/zenodo.5205500

Food poisoning	there is	21,2	0,706	1,833	1,294	1,294	2,373
	No	11,5	1,294		2,373		
Chemical poisoning	there is	23,1	0,588	2,40	1,412	1,412	3,388
	No	9,6	1,412		3,388		
Eating large amounts of food with synthetic additives	there is	23,1	0,622	2,215	1,378	1,378	3,053
	No	10,4	1,378		3,053		
Genetic predisposition to gastrointestinal diseases	there is	44,2	0,496	3,033	1,504	1,504	4,562
	No	14,6	1,504		4,562		
Congenital developmental pathologies	there is	48,1	0,561	2,564	1,439	1,439	3,689
	No	18,8	1,439		3,689		
Hormonal fluctuations and disturbances	>4,19	55,8	1,252	1,673	2,094	1,252	2,094
	<4,19	33,3	0,748		1,252		

Starvation	>31,2	53,8	1,206	1,520	1,834	1,206	1,834
	<31,2	35,4	0,794		1,206		
Compliance with diets unbalanced in food composition	>2,93	65,4	1,554	3,487	5,420	1,554	5.420
	<2,93	18,8	0,446		1,554		
An unbalanced diet with an excess of fatty and spicy foods	>3,73	94,2	1,346	2,056	2,766	1,346	2,766
	<3,73	45,8	0,654		1,346		

$1.17 \cdot 0.916 = 1.072$, if the patient has chronic bronchitis;

10.5281/zenodo.5205500

1.17 · 1.069 = 1.25, if the patient has chronic bronchitis with secretory insufficiency.

The predictive matrix includes all risk factors for the development of insufficiency identified for forecasting with their gradation and values of the integrated risk indicator from the strength of the influence of an individual factor (X), the relative risk indicator for each factor (R) and their sum for a complex of factors (RN), as well as the normalizing value - the average rate of CP with secretory insufficiency according to the data of the entire study (N).

The second group of students, in addition to the prognostic table, determined the possible range of risk values for the complex of the factors taken. The determination of the possible range of risk was carried out as follows.

In the predictive table, we determined the minimum values of the predictive coefficient (X) for each factor and summarize them. This value is the initial value of the risk of this pathology.

So, for example, in table 1 for the integrated assessment of the risk of occurrence of HF, the minimum values of the prognostic indices (X) for all factors were as follows:

1.429 + 1.297 + 1.235 + 1.585 + 1.469 + 1.705 + 1.257 + 1.378-1.504 + 1.439 + 1.252 +

+ 1.206 + 1.554 + 1.346 = 19.66

In this case, the minimum initial risk value is 19.66

Then, in a similar way, we find the sum of the maximum values of the prognostic indices for each factor.

3.582 + 2.396 + 1.995 + 6.063 + 4.069 + 9.854 + 2.127 + 3.053 + 4.562 + 3.689 +

+ 2.094 + 1.834 + 5.42 + 2.766 = 53.50

In this case, the risk range is within 19.7 ÷ 53.5.

Table 2. Values of sub-ranges and groups of an individual prediction of the risk of development

Subrange	Subrange size	Risk group
Low probability	19,7-31,0	Favorable prognosis
Average probability	31,1-42,4	Attention
High probability	42,5-53,5	Poor prognosis

It follows from this that the higher the value of the normalized integrated indicator of the risk of developing insufficiency in patients, the

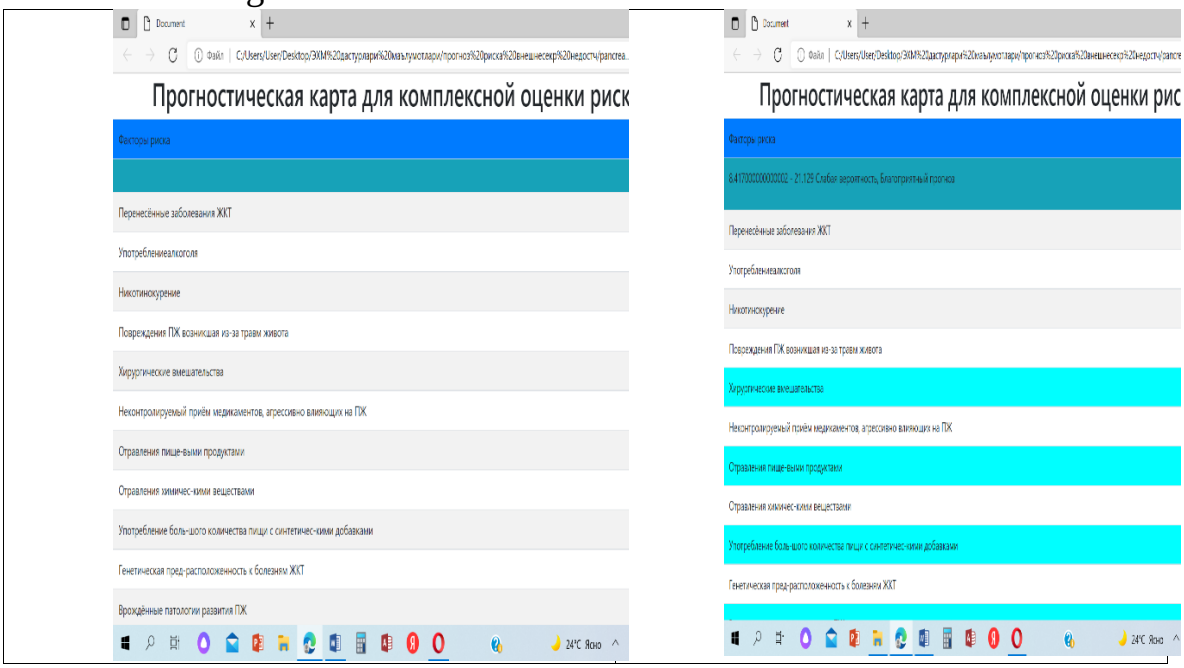
10.5281/zenodo.5205500

higher the likelihood of the risk of developing it in a given person and the more reasons for allocating him to the group of unfavorable prognosis.

In this regard, we have identified a possible risk range (19.7-53.58), as well as sub-ranges. In practice, it is better to divide the entire risk range into three intervals: weak (19.7 ÷ 31.0), medium (31.1 ÷ 42.4), and high (42.5 ÷ 53.5) risk of developing heart failure.

Thus, the threshold values of the final prognostic coefficients and the risk groups for the onset of pathology were determined.

The third group developed a computer program to use the forecast map. Data on risk factors, indicators of the prognostic matrix and risk ranges were entered into this program (Figures 1 and 2). This program made it possible for a short time to determine the risk of developing diseases of the gastrointestinal tract.



At the next stage of the study, the patients who applied to the clinic were examined using the developed program - the anamnestic data of 320 patients were determined using the prognostic card. High probability, poor prognosis was found in 137 (42.8%) patients, medium probability, attention in 112 (35%) patients and low probability, favorable prognosis in 71 (22.2%) patients. Based on the results obtained, the patients were given non-drug recommendations for the prevention of diseases.

And also a plan was developed for targeted screening of patients for primary prevention and early detection of the disease. This program has been made available for use by general practitioners.

10.5281/zenodo.5205500

Conclusion. In the course of the study, students' interest in scientific research increased and the importance of the scientific process in practice became obvious.

The integration of scientific activity into the educational process and practice has a positive effect on the training of highly qualified specialists. This process will provide an opportunity to create a wide range of opportunities for students to apply the results of scientific research in their future activities.

10.5281/zenodo.5205500

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