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COMPUTER DIAGNOSIS OF MEDICAL DISEASES ON THE BASIS OF CLINICAL DATA

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ABSTRACT:

The article provides practical recommendations for the use of information and communication systems in medicine. For example, on the basis of clinical data, recommendations for computer diagnosis of diseases in the field of medicine are given.

KEYWORDS: Information communication systems, online communication in medicine, computer networks.

INTRODUCTION:

Computers are used in the creation of automated diagnostic systems of modern medicine. They are used not only to diagnose the data, but also to quickly analyze them, monitor the patient's condition on the basis of continuously entered new data, and compare them with the data entered into a computer database.

The following methodological principles of diagnostic thinking are used in establishing a clinical diagnosis.

The nosological principle of diagnosis is the understanding of diseases based on certain information about the exact origins of various diseases, i.e. nosological units. A diagnosis is said to be made if the patient's symptoms match the data, which are stored in a database and are considered a reference. This principle has definite achievements and advantages. It is convenient for classifying diseases, and has the ability to reproduce information about diseases for scientific purposes. With the development of modern medicine, the nosological principle of disease expression has been formed as a complete system.

The syndrome principle of diagnosis is to understand and differentiate the disease processes in which only a single leading syndrome is present, regardless of whether they belong to different no so logical units, disease groups, even if they affect different systems and organs.

The principle of optimal diagnostic compatibility is a useful differential diagnosis and a reliable understanding of the disease in a short time.

The principle of the diagnostic algorithm is a clear representation of the actions performed in a precise sequence to establish the diagnosis for all diseases.

In addition to the above principles, there are other methods of diagnostic thinking.

The method of substantiating the diagnosis is the process of understanding the patient’s existing symptoms by comparing them with reference symptoms. Diagnosis is said to be based if the patient's identified symptoms are consistent with the reference symptoms of a particular disease.

The method of differential diagnosis is to understand the disease by denying the process and diseases that do not suit the patient, depending on the symptoms of the disease. Through a series of denials, the set of possible diseases is reduced, and finally one disease remains, and that is the diagnosis.

The diagnostic process used by the algorithms has high efficiency in the case of low cost and effort. However, algorithmic thinking has a number of features that need to be considered before working with diagnostic algorithms.

1. The diagnostic algorithm relies directly on the whole syndrome, not this or that nosological unit.
2. The diagnostic algorithm makes it possible to differentiate all or more significant nosological units that occur in a given syndrome at the minimum stages of optimal thinking.
3. The diagnostic algorithm consists of significant symptoms, which are crucial in the differential diagnosis of diseases that occur on a given syndrome.
4. Numerous algorithms are generally consistent with the work of the physician's thought process sequence.
5. The main goal of the algorithm is to establish a reliable diagnosis on the shortcut.
6. Each diagnostic algorithm consists of a numbered phase of logical operations and is therefore performed in the specified sequence.
7. Only one symptom is considered at each stage of the algorithm. One value must be answered at each stage.
8. The first is placed a symptom that allows you to suddenly differentiate a larger category of diseases.
9. In the later stages of the algorithm, in order to more reliably determine the differential diagnosis of individual groups of diseases and specific nosological units, symptoms of decreasing importance by level are placed.

As an example, we present a general schematic diagram of the diagnostic algorithm of the cardiovascular system in Figure 1.

Modern clinical cardiology has made great strides in analyzing the results obtained using useful device tools and electrophysiological methods. These successes have led some young physicians to the notion that a general clinical examination of a patient is an outdated branch of clinical cardiology. However, this notion is a misconception. Because the laws of blood circulation and the laws of its various disturbances are eternal, and new scientific inventions cannot change them.

The general clinical examination of the patient is therefore important because it allows the doctor to identify a set of symptoms, completely identify the circulatory system, understand the presence of heart disease and their various causes, determine the degree of circulatory failure.

Elements of the general clinical examination of the patient are the patient's complaints and his objective examination.

Chest pain, shortness of breath, and heart rate were important in the complaints of a patient with heart disease.

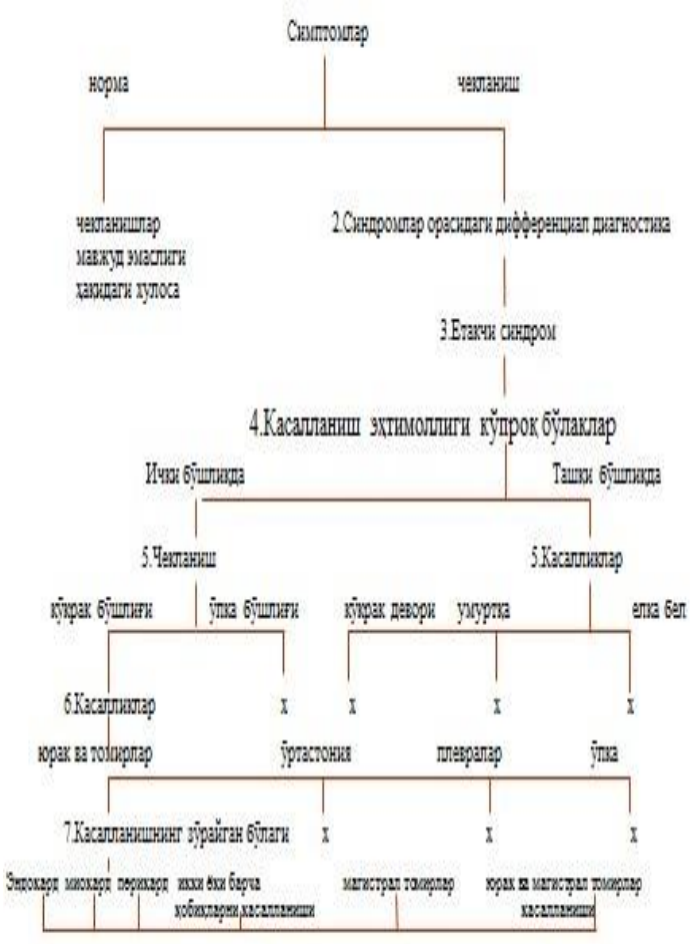

Figure 1. General schematic diagram of the diagnostic algorithm of the cardiology system

The diagnostic module consists of two parts: the medical memory and the logical structure of the implementation of diagnostic

thinking. Medical memory includes the laws of distribution, linking the no so logical manifestations that make up a conditional probability matrix or a given class of diseases with symptomatology. In turn, diagnostic "thinking" consists of a series of logical-computational processes that are applied either in parallel or in series.

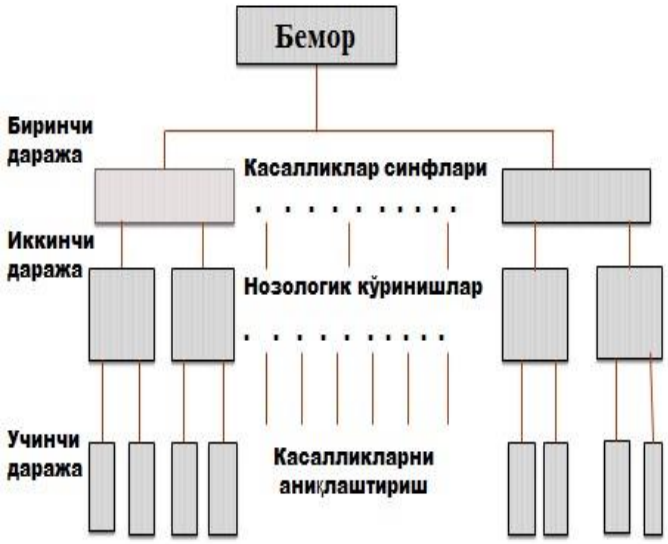

Figure 2. Block diagram of the general diagnostic system

In Figure 2 below, we present a block diagram of a general diagnostic system in which the entire system is constructed as a set of similar modules.

CONCLUSION:

The modern act will change the technology of medical care in various areas and raise it to a new level of high quality, including the introduction of differentiated methods of diagnosis, treatment, diagnosis and detection of many diseases in medical practice.

The President of the Republic of Uzbekistan signed a decree "On the state program for the implementation of the action strategy in five priority areas of development of the Republic of Uzbekistan in 2017-2021 in the" Year of Active Entrepreneurship, Support of Innovative Ideas and Technologies"

The fourth section of the state program is dedicated to the development of the social sphere. The work on further improving the medical care system and improving the quality of medical services will be continued. It is planned to introduce a system of "smart medicine" and innovative technologies in the health sector.

It is planned to establish 2,000 public pharmacies that will provide the population with quality medicines at affordable prices.

High level of informatization of the national health system High level of informatization of the national health system is an important factor in raising the efficiency and quality of the national health system to the required level and satisfaction with the high quality of services provided to the population.

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