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NANOTECHNOLOGY IN MEDICINE

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Abstract
This article discusses the possibilities of developing nanotechnologies in medicine in Uzbekistan, the process of developing information technologies in medicine and the formation of the science of medical informatics.

Keywords: "Medical informatics", nanotechnologies, information systems.

Introduction

Competently provided medical care depends on the speed of a competent diagnosis. Life is the most important value in the modern world.
The importance of striving to keep up with the times gives science a big jump-start to the knowledge of nanotechnology in medicine.
The foundations of modern diagnostics of diseases in medicine are based on developments in the field of nanotechnology. Knowing that all nanotechnologies are arranged by means of the foundations of informatics and nanoengineering, one can consider the diagnosis of diseases by means of observation of molecular systems, this allows removing the limitations of diagnostic techniques.
The introduction of nanotechnological and informational approaches into medical practice, as well as diagnostics, shows the following results:
Determines the speed and accuracy of the analyzes performed and allows for early diagnosis of diseases such as cancer, diseases of the endocril and cardiovascular systems of a person, as well as the detection of viral and bacterial infections allows for a comprehensive examination according to a set of diagnostic criteria, which determines an individual approach to treatment and prevention.

Currently, a lot of work is underway to introduce into practice the methods of medical nanodiagnosis of oncological diseases, viral hepatitis, HIV infections, methods for assessing the drug resistance of bacterial pathogens, a pharmacological monitoring system for assessing the individual tolerance of drugs.

The use of systems for targeted drug delivery using information technology means in the global sales volume is 20% of the total volume of the pharmaceutical market.

The use of nanotechnology and information bases allows the creation of nanomaterials with special properties for the growth of artificial organs and tissues, which introduces these processes at the genetic level.

The world medical community already has experience in growing with the help of nanotechnology, as well as partial and complete restoration of cartilage tissue.

The Russian scientific community is developing the use of nanotechnology and nanomaterials for restoring the mechanical properties of tooth enamel, as well as nanospositions in order to impart antibacterial properties.

The most important task of nanotechnology and information technology industries, in my opinion, as well as in the opinion of the world community, will be the development of equipment and materials for medicine, such as "smart implants", artificial vessels, artificial skin, for the interface of electronic devices implanted in humans, as well as electronic equipment supporting important vital processes of the individual.

You can also consider a new generation of devices that are developed on nanotechnological aspects for medical applications.

The science of our state is also developing the introduction of nanotechnological equipment in the medical field. That contributes to the invention of our own domestic equipment.

Information technology developments in the field of medicine are carried out all over the world. Each country is trying to get closer to the most accurate indicators in medical devices, at the lowest cost of production and operation. Indeed, the quality of medical care for citizens, and hence the health of the nation as a whole, depends on the accuracy of technical means and software for devices related to medicine, as well as on the competitive price of such devices.

Therefore, against the background of the prevailing epidemiological situation around the world, our state has given the opportunity to all scientific laboratories of the country to work in this direction.

So on the basis of the State Unitary Enterprise "Uzbek-Japanese Youth Center for Innovation" of the Republic of Uzbekistan, serial developments are underway. The device is designed to read a person's heart rate from the index finger.

This device is based on a silicon ultrasound sensor, which allows you to more quickly determine the level of oxygen in the blood, and also has a low error, which allows you to get a high-precision result.

This pulse oximeter makes measurements in less time, works autonomously, and also has low energy costs.

Also, software is being created for the clear transfer of this kind of data to a personal computer and storage of such data, for further use by medical personnel in the treatment of patients.

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