

Conclusion: The utilization of rubber gloves is an obligatory part of the all medical institutions functioning.

INNOVATIVE TECHNOLOGY IN DRUG PACKING

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Introduction. Packaging has become a very important part of the production of drugs, as innovations in the development of new drugs and new systems for their delivery to the body have reached a very high level. This package must keep up to increased requirements, as it must preserve the quality of medicines and not interact with it.

Aim. The purpose of these studies is to analyze the modern range of packages for medicines.

Materials and methods. In order to study this topic, informational materials, Internet sources (official websites of manufacturers, scientific articles) and the results of their own conclusions were used.

Results and discussion. The emergence of modern technologies contributes to the improvement of consumer properties of any types of products, including packaging.

Innovative methods are particularly significant in the development of packaging for medicines containing biomolecules, in particular proteins that have properties to interact with the primary container. The solution of this problem may be the application of innovative plasma coating technology when the surface of the inner container is covered with silicon dioxide, which avoids the chemical interaction between the container and its contents. This coating can be used in the manufacturing of various types of containers, i.e. cartridges, syringes, ampoules or vials.

For unstable medicines that lose activity in solutions or require preparation immediately before use, packets are developed for separate storage of components. This is a combination package with two separate chambers with medicinal substances ready for mixing at the time of consumption.

There are packages made with serial delivery of drugs (convenient on the road, out of house conditions), which are disks with cells, pencil cases with open windows to receive a dose of drugs.

It is very important to design it. The designers developed various color schemes of the packages and made the inscriptions depending on the purpose of the drug: «I have a headache,» «I have allergies,» «I have a stomach ache,» etc.

Another example is original package called Medi Flower. It is created in the form of a flower, whereas the petals – cells with pills placed in them. In addition, if you retract the carved plastic in the «flower» package, a stand will come out, which will allow the tablet to be placed in any prominent position for remembering to take the medication on time.

Modern inventions have reached a high level. The so-called «Intelligent Packaging» was created. It can be divided into the following groups: «Smart Packing» (packaging with certain helping elements for the patient, for example, the schedule for taking the drug on the days of the week, aiming to increase compliance in people with memory impairment, as well as the elderly); «Active packaging» (for example, complete set with the drug include spoons, cups or other dispensers); «Information packing» (with NFC technology or adding screens to screens and various sensors on the package), all aimed to directly transfer information about the specific packaging of a specific product to a smartphone or a screen on the package itself. Intelligent packaging can provide consumers with a better understanding of products and how to deal with it securely, for example by exchanging data with technology on smartphones, tablets, and other devices with Wi-Fi support to remind the patient of the need to take medications and provide a dosage schedule to achieve optimal results. These data can be passed on to the patient's doctor, which will allow them to track the treatment plans and print out recipe without the need for a formal request from the patient.

We shouldn't forget modern packaging of drugs with expiration notice. Hewlett-Packard has invented a special drug package that monitors the shelf life and storage conditions. The novelty contains a thermometer, a clock and a mini computer. The pharmacist programs the packaging by entering data on the drug. As soon as it expires, the computer will inform the patient about it.

Packages with a variety of functions are developed: packages warning of the presence of pathogenic microorganisms and even specific bacteria; they contain radio tags that help people with a diminished vision keep the device near themselves and can listen to the entire text of the instruction; the use of radio labels on syringes and blood bags completely eliminates the mistakes that occurred during dosing of analgesics and sterilization, as well as in the collection of samples and blood transfusions; Package with built-in alert (it is possible to set the time of taking medication and then the packaging begins to shine and play a musical melody (the invention of the company «GlowCaps»)).

Conclusions. The right choice of consumer packaging for the packaging of medicines plays a very important role not only in the preservation of products, but also in ensuring the convenience, efficient use for the health of the consumer. Therefore, scientific research in this area is very relevant and progressive.

ANALYSIS OF THE ASSORTMENT OF MEANS FOR THE PREPARATION OF OXYGEN COCKTAILS PREPARED IN THE PHARMACEUTICAL MARKET OF UKRAINE

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Introduction. Oxygen cocktails today have gained immense popularity around the world. They are used for the prophylaxis and treatment of various diseases of patients of all ages, namely: as immunomodulation means: in the complex therapy of gastrointestinal diseases, hepatobiliary system, Cardiovascular systems; acute respiratory infection hypoxia during pregnancy etc. In the pharmaceutical market of Ukraine there are already some composition of powders for obtaining oxygen cocktails, directly foaming mixtures and sets devices for making cocktails at home, in the conditions of medical and treatment-and-prophylactic institutions.

The aim of our study was to study the assortment of products for the preparation of oxygen cocktails on the pharmaceutical market of Ukraine.

Materials and methods was analyzed a modern assortment of oxygen cocktails. In the study we used the system and logical methods of analysis.

Results and discussion. To obtaining oxygen cocktails on the pharmaceutical market of Ukraine are present:

1. The composition of the finished powder mixtures: "Composition for oxygen cocktails based on milk powder "MilkO2", "Oxygen cocktail "Ekoteyl", composition for oxygen cocktail number 27, a series of "UNIVERSAL", composition for oxygen cocktail number 23, a series of "VITAMIN", Spoom – a mixture of "SPOOM". All of them contain in their composition foaming agent, active biological substances and excipients.

2. A separate group is represented by foaming agents in single-dose sachets containing dry egg white or dry licorice root extract.

3. Kits and sets for the preparation of an oxygen cocktail, consisting of a cocktail machine, an oxygen balloon and a package of foam-forming mixture.

It should be noted that products for making foam cocktails are actively produced by Ukrainian and Russian manufacturers. With a presence number of components, the composition of the finished mixtures is quite uniform. Finished mixtures are presented only immunomodulatory and vitamin compositions. Compositions for the treatment and prophylaxis of diseases of the gastrointestinal tract, cardiovascular system, liver are not represented.

Conclusions. Today, the modern assortment of products for the production of oxygen cocktails is presented in a wide choice and them make in great demand among consumers. In the analysis of the assortment of components for the preparation of oxygen cocktails, it was found that Ukrainian and Russian manufacturers are represented on the pharmaceutical and para-pharmaceutical market of Ukraine, but the composition of the of the finished spoom mixtures is the same. This study is valuable for manufacturers of new drugs, in particular, for the development of new compositions of dry mixes for the preparation of disposable oxygen cocktails.