breakthrough in the form of gold nanocapsules, which are designed to diagnose and treat cancer. This study has already been tested on laboratory animals and waiting for clinical trials.

Aim. The aim of this work is the theoretical substantiation of the use of nanoparticles for the diagnosis and treatment of malignant tumors.

Materials and methods. As objects for theoretical substantiation, nanoparticles of metals and nonmetals were chosen, which are used not only for delivering a pharmacologically active substance, but also as medicines on their own.

Results and discussion. To date, scientists have managed to get gold nanoparticles that detect cancer, with drugs against cancer, they can destroy the source of cancer cells. This will significantly reduce the side effect of many treatments. Potent drugs will act only on the cancer area and only for a certain time required for exposure to antibodies, but harmless to the person himself. Scientists plan to seize the opportunities of nanotechnology and force the voracious cancer cells to absorb everything in their field of vision, including nanoparticle-based drugs, to swallow their bait. In one of their experiments, scientists used modified bacterial cells that are 20 times smaller than normal cells. These cells were equipped with antibodies that were attached to cancer cells, and then "released" the anti-cancer drug they contained. Other scientists have used nanoparticles in combination with other treatments. As soon as the cancer cells absorbed these particles, they were heated by their magnetic field. As a result, the weakened cancer cells were more easily treated with chemotherapy.

American scientists have created cell repair machines. The essence of the method is that when passing through membranes, traveling through tissues and entering cells and viruses, machines can only repair any molecular damage, such as DNA damage or a lack of enzymes. Later, molecular machines will be programmed to a greater number of possibilities with the help of advanced artificial intelligence systems.

Nanocomputers are required to operate these machines. These computers will give the machine commands to inspect, disassemble and rebuild damaged molecular structures. Repair machines will be able to repair whole cells, structure by structure. Then, processing cell by cell and tissue by tissue, they can repair entire organs. Finally, processing organ by organ, they will restore the health of the whole body.

Conclusions. Thus, in the future, with the help of nanotechnology, mankind will be able to defeat non-treatable diseases, in particular cancer, diabetes, viral and bacterial diseases. In addition, the use of cell repair machines will be able to change the human genetic model, in particular, prevent aging and reconstruct all organs and systems.

THE PROCEDURE OF SPRS THERAPY – UNIQUE METHOD OF FACIAL AND BODY REJUVENATION

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Introduction. Service for Personal Regeneration of Skin technology therapy is a medical procedure that can only be carried out after being examined by a doctor to assess the condition of the skin and identify contraindications. A specialist after a visual inspection of the skin of the problem area assesses their thickness, elasticity and wrinkle severity. According to the results of the examination, the client is prescribed a certain number of procedures and the required number of cells. The preliminary stage of SPRS therapy involves the diagnosis of the patient's skin using multifunctional research methods and the creation of a special skin passport. Based on the data obtained, the specialist draws up an individual program for the correction of manifestations of aging and their prevention. Then a special preparation is created – a cell product based on the patient's own fibroblasts of the patient's skin. Only young fibroblasts are selected and cultivated. The sampling of skin particles (biopsy) is carried out from the ear region. It is from this piece in the laboratory that the necessary elements are mined and cultivated. Cultivation of fibroblasts is carried out for six weeks. After the material necessary for the selection of therapy is collected and a personal passport of the skin is developed, the specialist can begin the step of introducing fibroblasts into the patient's skin.

The introduction process is carried out with needles for mesotherapy. The operation does not take much time. The patient's skin in the required area is treated with anesthetics and antiseptics, after which the drug is injected subcutaneously. A part of the obtained but unused fibroblasts is frozen and stored in a cryobank in liquid nitrogen, in separate cells. The procedure of rejuvenation can be carried out throughout life, with a frequency of one-month and a half sessions.

Aim. The ability to correct age-related changes in any parts of the body (face, neck, hands, décolleté); reduce the number of deep wrinkles; elimination of scars resulting from acne; the speedy recovery of the skin after peeling; as preparation before an operative intervention, and also during the postoperative period; as prevention of early wilting of the skin.

Materials and methods. The procedure has several stages. The first stage consists in taking a biopsy of the skin (a piece of skin, most often from the ear shell), from which fibroblasts are isolated from standard laboratory manipulations. Then the biomaterial is placed in a test tube with a special solution and transported to the laboratory. The second stage is the selection and cultivation of fibroblasts. It should be clarified that only young and active fibroblasts are subject to selection and stimulation. Then, in specialized laboratories, fibroblasts are reproduced to the required number. The third stage is the introduction of cultured resident fibroblasts into the patient's skin. Cellular material is delivered in special containers to the clinic, where patients are given a course of SPRS therapy. Conduct therapy with needles for mesotherapy. The drug is injected into problem areas of the skin that need correction. Often, injections are made over the entire facial parameter, evenly with a certain sequence.

Results and discussions. Skin recovered and visibly rejuvenated; the color has become fresh and evened out; improved elasticity; deep wrinkles diminished and became almost unnoticeable. The positive effect of the fibroblast rejuvenation procedure lasts from three to five years. The specialist determines in advance the activity of fibroblasts and predicts what result can be obtained in the end.

Conclusion. SPRS technology is a special technique. Unlike other methods of rejuvenation aimed at stimulating the emergence of new cells, the SPRS procedure changes the external imperfections of the skin, restoring its structure from the inside. The use of fibroblasts completely eliminates the appearance of allergic reactions, because the patient’s cells are injected subcutaneously.

THE RESISTANCE ANALYSIS OF CANDIDA TO SOME ANTIFUNGAL PREPARATIONS

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Introduction. Within the limited antifungal armamentarium, the azole antifungals are the most frequent class used to treat *Candida* infections. Azole antifungals such as clotrimazole, itraconazole, voriconazole are often preferred treatment for many *Candida* infections as they are inexpensive, exhibit limited toxicity, and are available for oral administration. The fungistatic nature and prolonged use of azoles to treat fungal infections leads emergence of drug resistant fungal strains also increased pathogenicity of the fungi themselves. Thus, constant monitoring of the sensitivity of *Candida* fungi to modern preparations is necessary.

Aim. The study of the sensitivity of yeast-like fungi *Candida spp*., which are the causative agents of many candidal diseases, to some modern drugs – antimycotics.

Materials and methods. The objects of study are the strains of species *C. albicans*, *C. tropicalis*, *C. glabrata* and *C. krusei* from the collection of the biotechnology departments of the NUPh (reference microorganisms Ukrainian collection of microorganisms) and strains isolated from clinical material of patients with intestinal dysbiosis, inflammatory diseases of the oral cavity, the biomaterial of women with genital candidiasis, and identified as *C. albicans*, *C. tropicalis*, *C. glabrata* and *C. krusei*.

For the experiment used microscopic, cultural research methods and laboratory procedures, which were carried out according to generally accepted methods in biotechnology.