Thus, the problem that the world community has faced in recent years can be solved. The high specificity of phages determines their ability to infect not just a specific species, but a particular strain of bacteria. Bacteriophages penetrate deep into the very source of infection. As they are characterized by self-dosing they do not need to be injected in high doses. The more target bacteria, the more actively the phage multiplies and rapidly removed from the body in the absence of bacteria. The activity of preparations in respect to clinical strains of bacteria nearly 72-98%. Bacteriophage preparations can be used in different age groups. Allowed their use in pediatrics, during pregnancy and in newborns. Thus, a special group of therapeutic and prophylactic medicines has been created on the basis of bacteriophages. Bacteriophages are produced in liquid form (solution for ingestion, local and external use) and in tablets. A whole range of valuable biotechnological products can be obtained by administering peptides with desired properties into phage surface proteins. We can create desired properties of nanovaccines, immunogens, antibodies by modifying the bacteriophage. And if you supply the bacteriophage surface protein with fluorescent or magnetic markers then orient it to the cancer cells, you will get an agent for detecting tumors. Modern bioorganic chemistry also makes it possible to attach a cytotoxic drug to the phage particle and eventually obtain a medicine that targets cancer cells. Special phages with lytic enzymes were created that are able to fight against biofilms formed on the surface of the skin, tooth enamel, implants, catheters, artificial joints and in the respiratory tract. You can use live phages, and you can also extract from them the components involved in the destruction of bacteria such as lysine. These enzymes are able to destroy the cell wall of bacteria during phage infection. Lysines usually contain two domains. The first domain recognizes the substrate and binds to it, and the second domain performs the hydrolysis of the peptidoglycan. Mammalian cells do not have a wall, therefore phage lysines do not cause them any harm. One of the main advantages of phage lysines over antibiotics is the low likelihood of the development of resistance in bacteria. Several experiments were conducted in which *Streptococcus pneumononiae* and *Staphylococcus aureus* were grown in the presence of appropriate lysines at low concentrations, but this did not lead to the development of resistance in bacteria. Phage lysines are tested as antimicrobial agents not only in medicine but also in veterinary medicine, crop production, and also in the food industry. This is necessary to prevent the spread of dangerous pathogens on food. The disadvantage of using bacteriophages is that they are ineffective against intracellular microorganisms such as, for example, the causative agents of tuberculosis and leprosy. With the joint action of antibiotics and phages, mutual enhancement of the antibacterial effect is observed, which allows reducing the doses of antibiotics to a level that does not cause pronounced side effects. In addition, bacteria practically do not produce resistance simultaneously to both components of the combined preparation at the same time.

Conclusions. For today we have two main directions of phagotherapy development. The first one is that which is advocated by the doctors. It consists in a personalized approach to the selection of therapy. A patient with a bacterial infection should go to the phagotherapy laboratory where he is selected for active phage or a combination of them after determining the causative agent of the disease. The second direction is interesting for pharmaceutical companies that offer to produce more or less universal preparations containing phages that are active against the most common infectious agents.

PROSPECTS FOR THE METHODS OF HEALING OF THE WOUND USING BACTERIA

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Introduction. Wounds are mechanical damage the skin, accompanied by a violation of the integrity of the epithelial tissue. They can heal for a very long time, become infected and thus be hazardous to health. Unfortunately, there are no universal drugs for treatment, but new methods and drugs are emerging to solve this problem.

Aim. The study of modern methods of wound healing using bacteria.

Materials and methods. Analysis of scientific literature and the results of advanced research in the field of microbiology and pharmacology.

Results and discussions. Wound healing is a complex and long process, which depends on the regenerating abilities of the body. There are many different means by which the process of wound healing can be accelerated, prevent the occurrence of complications. We have analyzed the methods of wound healing using bacteria.

Swedish scientists from the agricultural university have developed a new method of accelerated wound healing, which is based on the use of lactic acid bacteria. These bacteria were used to manufacture and deliver chemokines to damaged tissues. The process of wound healing is accelerated due to changes in the microflora of the wound and the impact on specific immune cells.

Other scientists conducted studies using metabolites of bacterial strains of the genera Bacillus, which produces human fibroblast growth factor. This metabolite accelerates graft adhesion during autodermoplasty.

Also promising are methods using bacteria biofilms and the use of nanoparticles from bacteria.

Conclusions. Violation of wound closure is a growing medical problem associated with metabolic disorders and aging. Therefore, we consider a promising direction in microbiology – the development of methods for wound healing using bacteria.

MODERN METHODS OF ALLERHODERMATOSIS IMMUNE DIAGNOSIS

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Introduction. Allergic dermatosis is a heterogeneous group of skin diseases, including allergic contact dermatitis, various forms of eczema, atopic dermatitis, urticaria, allergic vasculitis, drug allergic rashes, and a number of other more rarely encountered dermatoses, in the pathogenesis of which the leading role belongs to allergic reactions.

The prevalence of allergic diseases in the world is about 20%. Allergic skin diseases occupy one of the leading places – more than 40% – in the structure of dermatoses.

Dermatoses today are a topical medical and social problem not only in Ukraine, but throughout the world.

Aim. Get acquainted with modern methods of allergic dermatosis immunodiagnosis.

Materials and methods. Immunological methods were studied in the Laboratory of Allergology of the SE «Institute of Dermatology and Venereology of the National Academy of Medical Sciences of Ukraine» (IDVNAMNU). We also conducted a scientific literature search in scientific journals.

Results and discussion. Allergic dermatoses have supervening changes occur in the immune system:

- T-helper cells (phenotype CD3 + CD4 +) number changes;
- increased levels of Ig G, Ig M, total IgE;
- increased levels of the circulating immune complexes (CIC), especially small sizes;
- increased levels of activated T-lymphocytes (HLA-DR + CD25 +);
- decrease in absolute and relative level of T-cells (phenotype CD3 + CD8 +);
- changes in the level of cytokines – the IL-4 and IL-5 concentration increasing, the INF-γ contains reducing;
- the neutrophil granulocytes phagocytic activity decreasing;
- the level of Eosinophilic Cathionic Protein (ECP) increasing.

In recent years, immunological laboratory tests have become increasingly important in allergology.

They can be divided into two large groups:

- non-specific (aimed at identifying common changes in the immune system under allergic diseases);