

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

Solodka Y. A, Yarmak T. P.

Scientific supervisor: ass. prof. Shapovalova O. V.

National University of Pharmacy, Kharkiv, Ukraine

solodka.yaroslava98@gmail.com

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);

- specific (identification of antibodies and cells involved in the allergic reaction's immunological phases).

As non-specific tests are used: complete blood count, determination of erythrocyte sedimentation rate (ESR), level of C-reactive protein, tests for determining subpopulations of T and B lymphocytes, the level of immunoglobulins of various classes, complement, CIC, various autoantibodies (for example, with urticaria), mediators of allergic inflammation and cytokines, which are more involved in the immune response to allergens: interleukin-4 (IL-4) – activation of IgE, IL-10, IL-5, INF- γ production, etc. The definition of the absolute number of lymphocytes, T-cells CD4 + and the CD4 + / CD8 + ratio refer to simple and cost-effective laboratory tests for the diagnosis of T-linked delayed-type hypersensitivity reactions.

As specific tests are used: IgG-, IgG4 – tests, determination of the level of specific IgG- / IgG4-antibodies in human serum / plasma using ELISA and ICA, leukotriene test, determination of the ECP and chemoattractants levels.

Specific IgA-test allows to determine allergen-specific IgA, which is a part of the body's immune defense system, in human serum / plasma using ELISA.

The leukotriene tests include the basophil antigen stimulation test (CAST® Cellular Antigen Stimulation Test)/ Its technology is based on the determination of sulfidoleukrienes (LTC₄, LTD₄, LTE₄) secreted by primed IL-3 basophils under the antigens influence in vitro. It is also called in vitro provocative test. Due to the sulfidol-leukotrienes de novo synthesis, the CAST® assay has the highest specificity compared with the classical histamine release test.

The increase in the ECP (eosinophil activation marker) and chemoattractants levels in biological fluids may be an indicator of allergic inflammation. The ECP test makes it possible to determine the level of ECP in the serum.

Immunodiffusion (Ouchterlony method) is used to diagnose the hypersensitivity of the immunocomplex type. This is a method of identifying specific antigens or antibodies based on the precipitate formation as a result of their migration towards each other in the agar layer.

In the IDVNAMNU Laboratory of Allergology these specific tests are used: the ESR determining and the leukocyte agglomeration reaction with drug allergens.

Conclusions. Laboratory diagnostics of allerhodermatosis involves, first of all, the use of modern proven effective methods, characterized by high (acceptable) unification and reproducibility with sufficient evidence basis.

EXPERIMENTAL RATIONALE POSSIBILITIES COMBINED USE OF DRUGS FOR TREATMENT OF URINARY TRACT INFECTIONS

Stadnichenko T.O.

Scientific supervisor: associate prof. Silaeva L. F.
National University of Pharmacy, Kharkiv, Ukraine
microbiology@nuph.edu.ua

Introduction. The structure of human renal diseases urinary tract infections are the largest group, ranking second among infectious human diseases in general. In recent years, changing spectrum of antimicrobial susceptibility of pathogens to the loss of sensitivity to many antibiotics and antiseptics. The use of antimicrobial compositions containing drugs with different mechanisms of action is a priority to find new ways to influence the diverse microbial cells in order to prevent the formation of resistance.

Aim. The aim of our study was a comparative study of antimicrobial activity under conditions in vitro drug – Nokamen and Canephron and determine the effect of the drug Nokamen the level of antimicrobial activity of drugs Bi-sept, Furazolidone, Ciprofloxacin and Levofloxacin.

Materials and methods. The antimicrobial activity of drugs studied in vitro in terms of generally accepted practice in microbiological agar diffusion method of modifying wells. As test microorganisms using reference strains of a typical American cultural collections: *S. aureus* ATCC 25923, *E. coli* ATCC 25922, *P. aeruginosa* ATCC 27853, *B. subtilis* ATCC 6633, *C. albicans* ATCC 885-653 and clinical strains isolated from the urine of patients with glomerulonephritis – *Kl. pneumoniae* kl.S10 and *E.coli* cells. D 11.