METHODS OF LABORATORY DIAGNOSIS OF HIV INFECTION

Podolyak Y.S.
Scientific supervisor: Shakun O.A.
National University of Pharmacy, Kharkiv, Ukraine
Lekashakun@ukr.net

Introduction. Human Immunodeficiency Virus or HIV is a disease of the immune system in which the patient's body loses its ability to defend against opportunistic infections and tumors.

Aim. The aim of this work is to analyze the literature on modern approaches to the diagnosis of HIV infection.

Materials and methods. Analysis of scientific literature and the results of promising research in the field of immunology.

Results and discussion. Modern diagnostics of HIV infection includes two stages: establishing the fact of HIV infection and determining the stage of the disease. Phase I of all studies is the use of an enzyme-linked immunosorbent assay (ELISA): ELISA is a screening method that aims to detect antibodies to HIV using other enzyme-labeled antibodies. All screening tests are highly sensitive, but ELISA can give a positive response in uninfected people (for example, in patients with autoimmune diseases: rheumatism, systemic lupus erythematosus, etc.). If the infection occurred relatively recently and the level of antibodies is still very low, then false negative results are possible with ELISA.

Therefore, when signs of contact with HIV-infected people appear, repeated examinations are carried out after 2-3 months. At the second stage of the study, Western blotting (Western blotting) is used: this is a more complex method that serves to confirm the fact of infection. This method detects antibodies to its individual structural proteins of HIV (p24, gp120, gp41, etc.). The results of immunoblotting are considered positive if antibodies are detected to at least three proteins, one of which is encoded by the env genes, the other by the gag genes, and the third by the pol genes. If antibodies to one or two proteins are detected, the result is considered equivocal and requires confirmation. In most laboratories, HIV infection is diagnosed by the simultaneous detection of antibodies to p24, p31, gp4l, and gpl20 / gp160 proteins.

The essence of the method: the virus breaks down into components (antigens), which consist of ionized amino acid residues, and therefore all components have a different embryo; then, using electrophoresis (electric current), the antigens are distributed over the surface of the strip – if there are antibodies to HIV in the test serum, they will interact with all groups of antigens, and this can be detected.

According to literature data, it is known that HIV DNA can be in the human genome for at least three years without signs of activity and antibodies to HIV (markers of HIV infection) do not appear. During this period, you can identify HIV-infected using polymerase chain reaction (PCR).

This is an extremely sensitive method – in theory, you can detect 1 DNA per 10 ml of medium. The essence of the method is as follows: using the polymerase chain reaction, many copies of a nucleic acid are obtained (a virus is a nucleic acid – DNA or RNA – in a protein coat), which are then detected using labeled enzymes or isotopes, as well as their characteristic structure. PCR is an expensive diagnostic method, so it is not used for screening and routine purposes.

Conclusion. It should be remembered that 90-95% of infected people appear in 90-95% of infected people within 3 months after infection, in 5-9% of infected people, HIV antibodies appear after 6 months, and in 0.5-1% of infected people, Later antibodies to HIV appear. In the AIDS stage, the number of antibodies can decrease, up to complete disappearance.

TECHNOLOGYCAL ASPECTS OF DEVELOPMENT OF THE COMPLEX DERMATOLOGICAL MEDICINE WITH PROBIOTIC

Soloviova A.V.
Scientific supervisor:Kaliuzhnaia O.S.
National University of Pharmacy, Kharkiv, Ukraine
soloviova.alina@gmail.com

Introduction. One of the important technological stages of development of medicines is the determination of structural and mechanical properties of samples. The physical properties of the emulsifier layer adsorbed on the oil-water interface affect the rheological parameters of the emulsion and their stability. Among the significant factors influencing the structural and mechanical properties of the system is the change in its composition. Therefore, during the process of the development of the composition and technology of a complex dermatological medicine with probiotic, had been studied the structural and mechanical parameters of experimental samples.

Aim. Study the rheological parameters of the samples of complex dermatological medicines with probiotic to choose the optimal composition among samples with different bases for soft dosage forms.

Materials and methods. Measuring of rheological parameters of the experimental had been carried on a rotary viscometer Viscotech "Myr 3000", in the