PHAGES PSEUDOMONAS AERUGINOSA AS AN ALTERNATIVE APPROACH IN ANTIMICROBIAL THERAPY

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Introduction. Nosocomial infections are a major problem in modern health care due to their prevalence. The exacerbation of the problem is due to the global spread of antibiotic resistance among microorganisms. In the last decade, there has been a rapid increase in the resistance of Pseudomonas aeruginosa to almost all antibacterial drugs, including antifungal cephalosporins and carbapenems.

Aim. Review of scientific research aimed at the development and testing of phage preparations for the treatment of infections caused by P. aeruginosa.

Materials and methods. Analysis of the scientific literature on the research topic.

Results and discussion. An alternative strategy to control bacterial infections under conditions of antibiotic resistance may be the use of lytic bacteriophages.The specificity and narrow spectrum of activity of bacteriophages avoid antibiotic-related complications associated with exposure to the microbiome, but also require mandatory testing of susceptibility to susceptible phages before prescribing phage therapy.

Pseudomonas aeruginosa is one of the most dangerous opportunistic pathogens. According to scientific studies, the use of piobacteriophage in surgical practice reduces by 2 - 2.5 times the healing time of wounds, oral phages have a high ability to penetrate into tissues, are effective in treating wounds, especially burns, improve the epidemic situation in hospitals.

The narrow spectrum of antibacterial activity of individual Pseudomonas bacteriophages can be compensated by using combinations of several phages with different spectra of activity. A review of scientific materials showed no side effects or toxic effects like local and systemic nature when using phage drugs P. aeruginosa.

Conclusions. Phage therapy is an effective and safe method of combating bacterial infections and is highly relevant and promising for further research and implementation in clinical practice. Bacteriophages and drugs created on their basis are able to significantly reduce or even completely destroy resistant strains of P. aeruginosa, which creates great prospects for the use of phage therapy against antibiotic-resistant infections caused by this pathogen. In clinical practice, it is advisable to use bacteriophages in combination therapy with antibiotics.

ONCOLYTIC ACTION OF VIRUSES

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Introduction. Currently, studies are being conducted on the feasibility of using viruses in combination therapy of malignant tumors. Traditionally, viruses have been considered only as pathogens. But new biological possibilities of viruses have been discovered. Oncolytic virotherapy is the latest technique, which consists in the use of replication-competent viral vectors to destroy cancerous tumors. The method of treatment of malignant tumors with oncolytic viruses that destroy

malignant neoplasms is the youngest branch of clinical oncology, which is gaining more and more recognition among specialists.

Aim. The aim of the research is to oncolytic action of viruses.

Materials and methods. We analyzed the theoretical developments and results of experimental studies published in the scientific literature in the following areas: the effectiveness of the use of viruses in the treatment of malignant tumors in the experiment, predictions about the possibilities of clinical use and mechanisms of antitumor action.

Results and discussion. According to research, the feasibility of using some viruses in combination cancer therapy is due to their ability in addition to direct cytodestructive action to affect the sensitivity of tumor cells to therapeutic agents and endogenous antitumor mechanisms, and the body as a whole, restoring its natural anticancer properties. The obtained results are positively evaluated by oncologists and predict the possibility of practical use. Some viruses, such as parvoviruses, reoviruses, Newcastle virus, naturally prefer cancer cells, while adenovirus or herpes simplex virus can be adapted or modified to make them specific for malignant cells. At present, the first clinical trials of gene therapy and antitumor vaccination methods based on the phenomenon of viral oncotropism have been conducted.

At the same time, the possibility of using oncotropic viruses as therapeutic agents in the oncology clinic in some researchers raises some doubts due to the fact that the processes occurring in the body at the level of genes are still poorly understood and are quite complex.

Conclusion. Less studied are the epidemiological safety of oncolytic viruses, the possible adverse effects of therapy and the duration of such therapy for each virus. Oncolytic viral therapy is a different therapeutic strategy, but in fact it is the same innovative strategy that still needs to be carefully tested in many trials. But even today there is no doubt that she will go this way and eventually succeed.

IMMUNOHISTOCHEMISTRY IN DIAGNOSTIC PATHOLOGY: ADVANTAGES, ALGORITHM, EXPERIENCE

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Introduction. Diagnostic Pathology (DP) nowadays remains a crucial field of medicine, aimed to identify the disease, it's possible future course and cyto-histological features, as well as to provide clinicians with abundant information on effective patients' management. Last one is possible due to immunohistochemistry (IHC) method - an immunostaining that detects specific antigens in cells. IHC spreads the borders for cancer diagnoses, as well as fulfills scientific research demands in various fields of practical medicine.

Aim. The aim of our work was to discuss the role of IHC in DP, base oneself on experience it's implementation in Training Scientific Laboratory of Bukovinian State Medical University (TSL BSMU).

Results and discussion. Primarily, in DP we use H&E samples to identify a pathological process that causes the disease in a specific case, it's cellular components and changes in them, as well as tissue condition and characteristic, including borders of healthy regions. For our DP cases, where 100% in a result were detected with oncological processes, H&E method wasn't enough to provide clinicians with data on further course of tumor or it's sensitivity to hormones etc. That is