

BACTERIOPHAGES IN MEDICINE

Karusheva D.M.

Scientific supervisor: Dubinina N.V.

National University of Pharmacy, Kharkiv, Ukraine

microbiology@nuph.edu.ua

Introduction. Phage therapy has been known for about a hundred years. Simultaneously with the discovery of phages, the idea of their use in the treatment of various infectious diseases of humans and animals arose. The history of the discovery of bacteriophages dates back to 1896. British chemist Ernest Hankin first described an agent that readily passes through bacterial-impermeable membrane filters and causes microbial lysis. The presence of viruses that infect bacteria was proven in a study by Felix d'Erel in 1917. Since the 1920s, bacteriophages have been used successfully in some countries in Eastern Europe, the former Soviet Union, and, prior to the era of antibiotics, in the United States and other Western countries. To date, the use of bacteriophages occupies a significant place in clinical medicine, but research continues on the safe use of bacteriophages.

Aim. Using the literature to study the practical application of bacteriophages in medicine.

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

Results and discussion. The use of bacteriophages was proposed by one of the pioneers of the phenomenon of bacteriophagy F. d'Erel, who first used a phage drug to treat severe dysentery in a child in 1919. In 1921, Richard Bryong and Joseph Meisin first described a successful treatment for staphylococcal skin infections using staphylococcal phage. In the 1930s, the pharmaceutical company Eli Lilly developed and produced phage preparations for clinical use against staphylococci, streptococci, *Escherichia coli* and other human bacterial pathogens.

Thus, in the first half of the twentieth century, phage therapy was a promising direction in which many studies were carried out showing the effectiveness of the use of bacteriophages for therapeutic purposes. But after the discovery of antibiotics by Fleming and the beginning of their use in clinical practice, the mass interest in bacteriophages as therapeutic drugs decreased. The renaissance of phage therapy is observed in the 21st century, after the development and spread of antibiotic resistance in bacteria.

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.