EPIDEMIOLOGICAL EVALUATION OF BACTERIOPHAGES AS FACTORS OF EVOLUTION OF HOSPITAL STRAINS AND MEANS OF CONTROL WITH HOSPITAL-ACQUIRED INFECTIONS

Artemenko V, Honyshniuk D.
Vinnytsya National Pirogov Memorial Medical University
e-mail: vlada11092003@gmail.com

Relevance. The investigation of the problem of infections, especially hospital-acquired infections (HAIs), is closely related with the studying of the biological properties of pathogens in the evolution of hospital strains. Bacteriophages play an important role in the development of bacteria and in the realization of their pathogenic potential. The phenomenon of phage transduction is accompanied by the acquisition by bacteria of genes for resistance to antibacterial drugs and by increase in epidemiological spread. In such circumstances, the situation in the fight against infectious diseases may soon become the same as it was before the discovery of antibiotics. Accordingly, one of the effective components in the fight against bacterial infections, including those caused by antibiotic-resistant strains, is the use of bacteriophages.

Aims. Estimation of the role of bacteriophages in the evolution of HAIs pathogens and anti-epidemic potential of bacteriophages.

Materials and methods. A retrospective analysis of the literature of scientific databases Web of Science, Scopus, Pub Med and studies conducted in a number of treatment and prevention organizations of various profiles and patients in the out-hospital population.

Results. Control bacteriological exam of the material after phage therapy showed the absence of *Staphylococcus aureus* in the material. Against the background of the use of staphylococcal bacteriophage, the frequency of infection decreased to zero. Therefore, complete elimination of *S. aureus* was observed after phage therapy. Mono- or combined drugs of phages were used. After analyzing the statistics, we were able to conclude that the use of bacteriophage was an effective method of eliminating the outbreak caused by *S. aureus*. The epidemiological effect of phage use against methicillin-resistant strain of *S. aureus* was also demonstrated.

Conclusion. The results of this studying convincingly indicate the high anti-epidemic efficacy of bacteriophages in outbreaks of HAIs. A number of properties that phages have, in particular high specificity for specific pathogens, give them an advantage over other antibacterial agents.