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Comparative Evaluation of the Effectiveness of Methods for the Treatment of Surgical Soft Tissue Infection

Background: The presence of a multifaceted microbiological etiological factor of surgical infection and differentiated sensitivity to antibacterial drugs determines the need to develop more effective means and methods of influencing the purulent microflora of wounds. Physical treatment factors, in particular, low-frequency ultrasound and ionised plasma flows, should be considered promising for solving this problem.
Materials and methods: The research was carried out based on the Scientific Center of Microbiology and the clinic of the Tashkent Medical Academy. Bacteriological studies of wound discharge and biopsy material were carried out. We studied the material of purulent-inflammatory diseases of soft tissues.
Results: Wound-sounding through a dioxidine solution is most effective against gram-negative bacteria, and ultrasonic cavitation in combination with iodopyrone is most effective against gram-positive microorganisms. Treatment of purulent wounds with low-frequency ultrasound through a mixture of iodopyrone solution and ascorbic acid is effective against gram-positive and gram-negative microbes. Argon plasma flows have a high bactericidal effect mainly on gram-negative bacteria.
Conclusion: The obtained data substantiate the need to choose a physical method of treatment of purulent wounds depending on the species composition of the wound microflora.

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Hypochlorous acid has emerged as a potential alternative to conventional antibiotics due to its broad-spectrum antimicrobial activity

Hypochlorous acid (HOCl) is a potent antimicrobial agent that has recently gained attention as a potential alternative to conventional antibiotics. HOCl is produced by the human immune system in response to infection and is known for its broad-spectrum antimicrobial activity. It is effective against a wide range of microorganisms, including bacteria, viruses, and fungi, and has been shown to be more effective than many conventional antibiotics. One of the key advantages of HOCl is its ability to kill bacteria without promoting the development of antibiotic resistance. Unlike conventional antibiotics, which target specific bacterial structures or processes, HOCl acts by disrupting multiple cellular components, making it much more difficult for bacteria to develop resistance. Another advantage of HOCl is its safety profile. Unlike many conventional antibiotics, HOCl is not toxic to human cells and does not cause side effects such as gastrointestinal upset or allergic reactions. Overall, HOCl shows great promise as a potential alternative to conventional antibiotics, particularly in the face of rising antibiotic resistance. With further research, it may become an important tool in the fight against infectious diseases. Herein, we discuss the mechanisms of HOCl antimicrobial action, its potential clinical applications, and future directions for research. This review aims to provide an overview of the use of hypochlorous acid (HOCl) as an antibiotic agent.
