

Application of bacterial cellulose experimental dressings saturated with gentamycin for management of bone biofilm *in vitro* and *ex vivo*.

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Kolekcja

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Streszczenie

Bacterial cellulose is one of the most promising polymers of recent years. Herein, we present a possibility of BC application as a carrier of gentamycin antibiotic for the treatment and prevention of bone infections. We have shown that BC saturated with gentamycin significantly reduces the level of biofilm-forming bone pathogens, namely *Staphylococcus aureus* and *Pseudomonas aeruginosa*, and displays very low cytotoxicity *in vitro* against osteoblast cell cultures. Another beneficial feature of our prototype dressing is prolonged release of gentamycin, which provides efficient protection from microbial contamination and subsequent infection. Moreover, it seems that bacterial cellulose (BC) alone without any antimicrobial added, may serve as a barrier by significantly hampering the ability of the pathogen to penetrate to the bone structure. Therefore, a gentamycin-saturated BC dressing may be considered as a possible alternative for gentamycin collagen sponge broadly used in clinical setting

Słowa kluczowe

bone infection, gentamycin, bacterial cellulose, biofilm

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