

Topical application of sorption hydrophilic/hydrophobic composition based on nanosilica in the treatment of patients with burns.

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Introduction. One of the promising methods of treatment of patients with burns is the local use of sorption agents with antimicrobial properties.

Objective of the study. Studying the antimicrobial properties and clinical effectiveness evaluation of the local use of a new sorption composition based on nanosilica in the complex treatment of patients with burns.

Material and Methods. The suggested sorption nanocomposition included highly dispersed silicon dioxide, polymethylsiloxane, decamethoxine, metronidazole. The experimental study evaluated the antimicrobial properties of the sorption nanocomposition and antimicrobial agents which are part of it. 42 patients with IIab-III degree burns with an area of 10-30% of the body surface were examined. Depending on the tactics of local treatment, patients were divided into 2 groups: after early necrectomy, xenodermoplasty, the wound surface of the patients in the main group (n = 20) was treated with a solution of decamethoxine in combination with the same sorption powder. Treatment in the control group (n = 22) was similar except the use of sorption drugs. The examination included visual inspection of the injured area in combination with microbiological monitoring of the wound contents on the 3rd, 7th, 14th day.

Results. The obtained results confirmed the sufficient antimicrobial potential of the studied sorption nanocomposition, the properties of which are on the equal foot with the existing antiseptics applied for museum and clinical strains of microorganisms and fungi. Signs of a more favorable wound healing process of the patients in the main group were observed: faster wound cleaning, less inflammatory reactions and much shorter preparation of wounds for grafting.

Conclusion. The obtained results convincingly show the effectiveness of a multicomponent composite based on nanosilica with antimicrobial components in a comprehensive treatment of patients with burns.

Key words: burns, wound healing process, infection, antiseptics, sorbents.