“The aim of this study was to investigate the in vitro and in vivo efficacy and the tissue reaction of an antibiofilm coating composed of xylitol, triclosan, and polyhexamethylene biguanide” Silva Paes Leme et al (2015).

Reference:

Effective antibiofilm coating for central venous catheters http://ctt.ec/G9fw7+ @ivteam #ivteam

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Abstract:

The aim of this study was to investigate the in vitro and in vivo efficacy and the tissue reaction of an antibiofilm coating composed of xylitol, triclosan, and polyhexamethylene biguanide. The antimicrobial activity was analyzed by a turbidimetric method. Scanning electron microscopy was used to evaluate the antiadherent property of central venous catheter (CVC) fragments impregnated with an antibiofilm coating (I-CVC) in comparison with noncoated CVC (NC-CVC) fragments. Two in vivo assays using subcutaneous implantation of NC-CVC and I-CVC fragments in the dorsal area of rats were performed. The first assay comprised hematological and microbiological analysis. The second assay evaluated tissue response by examining the inflammatory reactions after 7 and 21 days. The formulation displayed antimicrobial activity against all tested strains. A biofilm disaggregation with significant reduction of microorganism’s adherence in I-CVC fragments was observed. In vivo antiadherence results demonstrated a reduction of early biofilm formation of Staphylococcus aureus ATCC 25923, mainly in an external surface of the I-CVC, in comparison with the NC-CVC. All animals displayed negative hemoculture. No significant tissue reaction was observed, indicating that the antibiofilm formulation could be considered biocompatible. The use of I-CVC could decrease the probability of development of localized or systemic infections.

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