Research Compact

Tags

Octenilin, Wound

Title

New *in vitro* model evaluating antiseptics´ efficacy in biofilm-associated *Staphylococcus aureus* prosthetic vascular graft infection

Authors

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Source

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Aim of the study

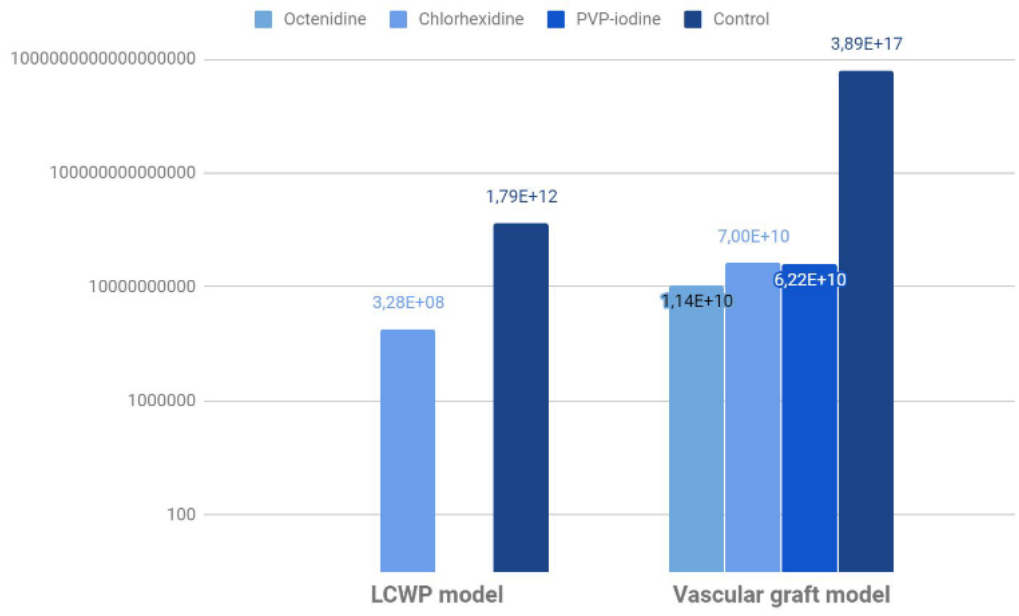
A new in vitro model for the evaluation of antimicrobial and biofilm efficacy of octenidine, PVP-iodine and chlorhexidine against *S. aureus* in prosthetic vascular graft infections (PVGI) was developed in this study.

Methods

Biofilm efficacy of octenidine (0.1%), PVP-iodine (10%) and chlorhexidine (0.02%) was tested on glass cover slips in the Lubbock chronic wound pathogenic biofilm (LCWPB) model and on the surface of vascular grafts. Biofilms were assessed with qualitative (Congo red agar) and quantitative (crystal violet assay) methods, as well as scanning electron microscopy

Results

In the LCWPB model no viable *S. aureus* were recovered after the treatment with octenidine or PVP-iodine. However chlorhexidine did not completely eradicate *S. aureus* in this model. Octenidine was the strongest of the tested antiseptics in the newly developed vascular graft model, although the others reduced S. aureus in a comparable magnitude.



Conclusion

Octenidine showed the strongest antimicrobial activity against *S. aureus* biofilms, grown on prosthetic vascular grafts. However, combinational therapy of chlorhexidine with either povidone-iodine or octenidine dihydrochloride should be tested in further experiments.