

P 31

AN IN VITRO COMPARISON OF ANTIMICROBIAL ACTIVITY AND SILVER RELEASE FROM FOAM DRESSINGS

Christiane Buchholtz¹.

¹Research and Development, Coloplast A/S (Humblebaek, Denmark)

Aim: Comparing the silver release characteristics of 4 commercially available foam dressings containing silver.

Methods: The silver release from the 4 foams was measured using a modified Franz diffusion method¹. The amount of released silver ($\mu\text{g}/\text{cm}^2$) was measured using an AA Spectrophotometer.

The antimicrobial activity was tested using a Zone of Inhibition (ZOI) assay against the pathogens *P. aeruginosa* and *S. aureus*. Samples ($\varnothing 10$ mm) were placed on an agar plate on a lawn of 105 cfu/ml, incubated 18-24 hours, 35-37°C. The clear zone around the samples was determined.

Results: Only 1 foam dressing displayed antimicrobial activity day 1-3 in the ZOI assay against both *P. aeruginosa* and *S. Aureus*, this same foam released the highest level of silver between 48 and 168 hours and provided a solid sustained silver release throughout a potential wear time of 7 days. The in vitro silver release of the foam with a soft silicone-layer was negligible ($\leq 0.35 \mu\text{g}/\text{cm}^2$ during a 4 hour period).

Conclusion: Silver must be released in order to be effective in the wound, and sustained silver release is an important characteristic of an ideal silver dressing². The soft silicone-layer foam had no noteworthy release of silver and no antimicrobial activity suggesting that the silicone-layer may be encapsulating the foam keeping silver from reaching the wound.

References

1. Dolmer, M. *et al.* Poster WUWHS 2004
2. White, R.J. (2001) B.J.N. The Silver Supplement Part I.3-8.