Antimicrobial dressings testing - Foams

Dr. Pamela Ashman, Paul Hay, Dr. Gavin Hughes & Pete Phillips

Surgical Materials Testing Laboratory, Princess of Wales Hospital, South Wales.

Introduction

- SMTL tested wound dressings containing antimicrobial agents submitted for the 2009/10 All-Wales NHS Wound Management Contract.
- A range of products were examined, including alginates, hydrofibres, foams, low adherent dressings and gauze products.
- Three test methods were used. This poster shows the results for Direct Inoculation against Foam dressings.
- All silver-containing dressings were assayed for total silver content using ICP-OES.

Methods

- Log Reduction Test by Direct Inoculation based upon a method described by C. Gallant-Behm et al.[1].
- Dressings tested against clinical isolates of MRSA and P. aeruginosa from infected leg ulcers at the Princess of Wales Hospital, Bridgend.
- Dressings pre-wetted with sterile water and left for 2 hours prior to inoculation.
- Dressings tested after 4 and 24 hours incubation at 35±2°C.
- Microorganisms recovered by vortexing in a standard neutralising solution.
- Total viable counts performed using a standard plate count method.
- Log reduction calculated as the difference between the number of microorganisms recovered from the control dressing at time 0 and the test dressings at 4 or 24 hours.

Discussion

- In antibiotic assay sensitivity testing, a compound may be considered bactericidal if the population is reduced by three orders of magnitude[1].
- With the exception of Allevyn Ag, the dressings showed greater activity against P. aeruginosa compared with MRSA.
- All of the dressings showed significant activity (>3 log reduction) against P. aeruginosa after 4 and 24 hours except for Allevyn Ag.
- The maximum sensitivity of the assay was limited to a 4-log reduction, due to the dilution factors.

References


Explanatory Notes

- The numbers at the top (or underneath) each of the bars show the % silver as analysed by ICP-OES.
- Bars without these numbers are silver-free dressings.

Conclusions

- The total silver content for some dressings is not correlated to their antimicrobial activity.
- The PHMB dressing (AMD) performed as well as or better than the silver dressings in this test.

Submitted to the Journal of Wound Care for publication.