Antimicrobial dressings testing - Alginates/Hydrofibres
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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 Alginate/Hydrofibre dressings.
- All silver-containing dressings were assayed for total silver content using ICP-OES.
- Algivon (a manuka honey dressing) was the only non-silver product tested.

Methods

- Log Reduction Test by Direct Inoculation based upon a method described by C. Gallant-Behm et al.[1]:
  - Dressings were tested against clinical isolates of MRSA and P. aeruginosa from infected leg ulcers at the Princess of Wales Hospital, Bridgend.
  - 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]:
  - The majority of the dressings showed significant activity (>3 log reduction) against P. aeruginosa after 4 and 24 hours.
  - None of the dressings approach a three log reduction after 4 hours against MRSA - most showed an increase in the number of viable organisms after this time.
  - Acticoat and Algivon were the only dressings that showed activity greater than a three log reduction after 24 hours against MRSA.

Results against Pseudomonas

- Log reduction calculated as the difference between the number of microorganisms recovered by vortexing in a standard neutralising solution.

Results against MRSA

- Microorganisms recovered from the control dressing at time 0 and the test dressings at 4 or 24 hours.

Conclusions

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

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.

Submitted to the Journal of Wound Care for publication.