

+ Evidence in focus

Publication summary: Ross JA, et al. *Burns* (2020)*

Smith+Nephew

ACTICOAT[◇] FLEX 3 Antimicrobial Barrier Dressing outperformed two other silver-based dressings for antimicrobial efficacy in an *in vivo* porcine model of deep partial-thickness burns

+ Plus points

After 1 day, ACTICOAT FLEX 3 Dressing showed:

Significant reductions in total bacteria in wounds versus gauze (p=0.02)

4.02
mean log₁₀ CFU/g tissue
Greatest reduction in wound bacteria versus other silver-based dressings tested compared with gauze

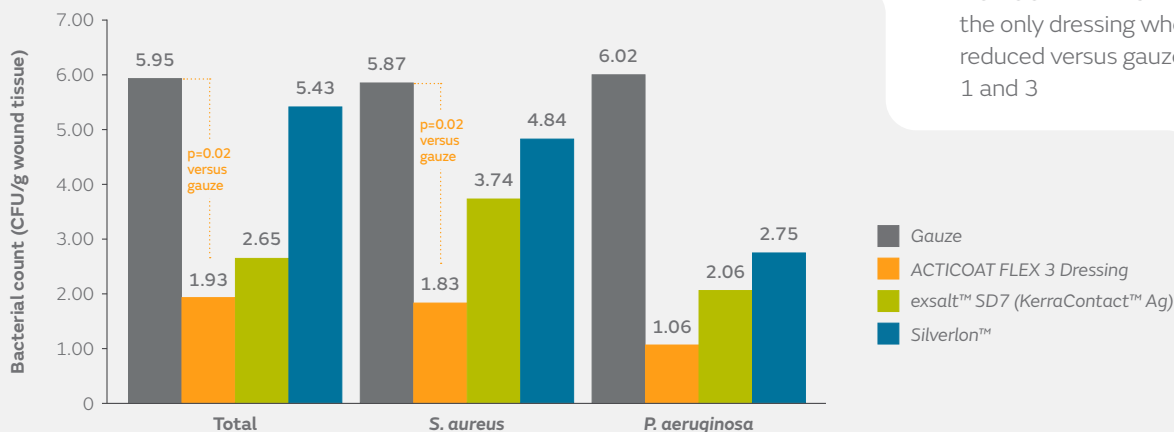
Largest reduction in total bacteria in the dressing compared with other silver-based dressings tested

Overview

- An *in vivo* porcine burn wound model was used to compare antimicrobial efficacy of ACTICOAT FLEX 3, Silverlon™ (Argentum Medical LLC, USA), and exsalt™ SD7 (now known as KerraContact™ Ag; Exciton Technologies Inc., Canada) with gauze non-antimicrobial control
- Deep partial-thickness burns were created and challenged with high bacterial load of *Staphylococcus aureus* and *Pseudomonas aeruginosa* (1:1 mixture; 0.5mL of 10⁸ CFU/mL)
- Four dressings were tested per time point (days 1 and 3) per animal; three animals were used

Results

- For bacteria in burn tissue after 1 day:
 - ACTICOAT FLEX 3 Dressing had the lowest mean recovery with a significant difference versus gauze for total bacteria and *S. aureus* (p=0.02; Figure)
 - Mean log₁₀ reduction in total bacteria was greatest with ACTICOAT FLEX 3 Dressing (4.02 CFU/g tissue)
- For bacteria in dressings after 1 day:
 - ACTICOAT FLEX 3 Dressing had the lowest mean recovery of bacteria from silver-based dressings
 - Mean log₁₀ reduction in total bacteria was greatest with ACTICOAT FLEX 3 Dressing (1.82 CFU/g tissue)
- For bacteria in burn tissue and dressings after 3 days:
 - Reductions versus gauze were greatest with ACTICOAT FLEX 3 Dressing
 - S. aureus* in burns increased with the other dressings
 - Compared with gauze, no dressing reduced erythema or wound size
 - ACTICOAT FLEX 3 Dressing was the only dressing where swelling was reduced versus gauze after both days 1 and 3



Conclusions

ACTICOAT FLEX 3 Dressing outperformed Silverlon™ and exsalt™ SD7 (KerraContact™ Ag) in terms of antimicrobial efficacy in this porcine model of deep partial-thickness burns. The authors noted that infected wounds with high bacterial load may require more frequent dressing changes than performed in this independent study.

Citation

*Ross JA, Allan N, Olson M, Schatz C, Nation PN, Gawaziuk JP, et al. Comparison of the efficacy of silver-based antimicrobial burn dressings in a porcine model of burn wounds. *Burns*. 2020;50:305-4179(19)30860-5. [Epub ahead of print].

Available at: [Burns](#)

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