

Evaluation of a Silver Mesh Dressing* in the Management of Wounds Where Sub-infectious Microbial Colonization is Suspected

Marie Brown-Etris, RN, CWCN , Etris Associates, Inc., Philadelphia, PA, USA

Introduction

Silver has a long history of use in both wound care and medicine in general. The antimicrobial properties of silver were first understood in the late 1800s and led to development of silver foil wound dressings, which were extensively used until the introduction of antibiotics. More recently, with the recognition of the role of wound bioburden in the healing process and the advent of antibiotic resistant organisms, ionic silver dressings have become popular for the treatment of chronic wounds.

Advantages of Ionic Silver Dressings

- Give the clinician a new option for the control of wound bioburden without the use of antibiotics or harsh chemicals.
- Particularly useful in situations where sub-infectious microbial colonization is suspected.
- Effective against a wide variety of organisms.[†]
- Effective against antibiotic resistant organisms such as MRSA and VRE.[†]

Advantages of a Silver Mesh Dressing*

- Unique design gives it the look and feel of conventional gauze, but is a non-woven.
- Easily cut to the size and shape of the wound or can be used as a wound filler.
- Easily removed from the wound without the need for extensive irrigation and will not shed particles into the wound.
- Can be used as either a primary dressing or in combination with a wide variety of wound dressings and cleansers.
- Minimal risk of staining periwound skin.
- Does not require pre-activation with sterile water, normal saline can be used.
- Affordably priced and can be left in place for up to seven days when clinically appropriate.

Objective

The objective of this study was to evaluate the clinical performance and acceptance of a silver mesh dressing* in treatment of wounds where sub-infectious microbial colonization was suspected. Four of the seventeen patients are presented as case studies.

Case Study #1

Patient History

A 41-year old male presented with a 45-day history of a pressure ulcer on the sacrum. The wound was non-healing and appeared to be colonized as evidenced by purulent drainage and the presence of necrotic tissue.

Wound Condition

- Ulcer Area: 19.78 cm²
- Erythema: None
- Drainage: High & purulent
- Maceration: None
- Undermining: 1.5 cm
- Necrotic Tissue: 26% - 50%
- Granular Tissue: 26% - 50%

Initial Study Visit



Filling the wound with silver mesh dressing*



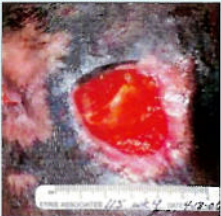
Undermining evident at Week 1 Visit (~2.5 cm)



Wound Condition

- Ulcer Area: 8.66 cm², 56.2% reduction from initial study visit
- Erythema: None
- Drainage: Moderate & serous
- Maceration: None
- Undermining: 4 cm
- Necrotic Tissue: <25%
- Granular Tissue: 76% - 100%

Week 4 Final Study Visit



Dressing Performance

There were no reports of adverse events or staining of the wound or periwound skin during the study period. All dressing performance evaluations of ease of application, ease of removal, and conformability were rated as "very good."

Case Study #2

Patient History

A 57-year old male presented with a 90-day history of a Stage IV pressure ulcer located on the left ischium was enrolled into the study. The wound appeared to be colonized as evidenced by color of the drainage and stalled wound closure.

Wound Condition

- Ulcer Area: 3.4 cm²
- Erythema: None
- Drainage: Minimal & Serosanguineous
- Maceration: None
- Undermining: None
- Necrotic Tissue: None
- Granular Tissue: 76% - 100%

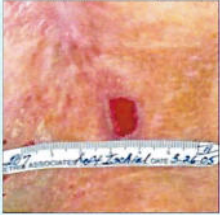
Initial Study Visit



Silver mesh dressing* cut to size & shape of the wound



Week 3 Interim Study Visit



Wound Condition

- Ulcer Area: 0.09 cm², 97.4% reduction from initial study visit
- Erythema: None
- Drainage: Absent
- Maceration: None
- Undermining: None
- Necrotic Tissue: None
- Granular Tissue: 76% - 100%

Week 4 Final Study Visit



Dressing Performance

There were no reports of adverse events or staining of the wound or periwound skin during the study period. All dressing performance evaluations of ease of application, ease of removal, and conformability were rated as "very good."

Case Study #3

Patient History

An 85-year old female presented with a 30-day history of a Stage IV pressure ulcer located on the sacrum. The wound appeared to be colonized as evidenced by purulent drainage and odor.

Wound Condition

- Ulcer Area: 16.63 cm²
- Erythema: Mild
- Drainage: Moderate & purulent
- Maceration: None
- Undermining: 3 cm
- Necrotic Tissue: 76% - 100%
- Granular Tissue: <25%

Initial Study Visit



Wound filled with silver mesh dressing*



Week 2 Interim Study Visit



Wound Condition

- Ulcer Area: 10.9 cm², 34.5% reduction from initial study visit
- Erythema: None
- Drainage: Moderate & serous
- Maceration: None
- Undermining: 2.5 cm
- Necrotic Tissue: <25%
- Granular Tissue: 51% - 75%

Week 4 Final Study Visit



Dressing Performance

There were no reports of adverse events or staining of the wound or periwound skin during the study period. All dressing performance evaluations of ease of application, ease of removal, and conformability were rated as "good" or "very good."

Case Study #4

Patient History

An 89-year old male presented with a one-year history of a venous insufficiency leg ulcer. The wound was non-healing and appeared to be colonized as evidenced by inflammation, purulent drainage, odor and a very slow rate of wound healing.

Wound Condition

- Ulcer Area: 18.89 cm²
- Erythema: Moderate
- Drainage: Moderate/Purulent
- Maceration: 26% - 50% of periwound skin
- Undermining: None
- Necrotic Tissue: None
- Granular Tissue: 76% - 100%

Initial Study Visit



Wound Condition

- Ulcer Area: 3.73 cm², 80.3% reduction from initial study visit
- Erythema: Mild
- Drainage: Minimal & Serosanguineous
- Maceration: None
- Undermining: None
- Necrotic Tissue: None
- Granular Tissue: 76% - 100%

Week 4 Final Study Visit



Dressing Performance

There were no adverse events or staining of the wound or periwound skin during the study period. All dressing performance evaluations of ease of application, ease of removal, and conformability were rated as "good" or "very good."

Conclusions

- Use of a silver mesh dressing* successfully lead to the resumption of wound healing in these four case studies where bacterial colonization was suspected.
- The silver mesh dressing* was soft and conformable and did not stain the wound or periwound skin.
- The silver mesh dressing* was easy to use, did not require pre-activation, and was compatible with a variety of commercial wound cleansers, normal saline and other wound dressing materials.
- Because of its familiar gauze-like appearance, the silver mesh dressing* was clinician-friendly and easy for staff and caregivers to understand and use.

*3M™ Tegaderm™ Ag Mesh dressing, 3M Health Care, St. Paul, Minnesota

† Laboratory test data on file at 3M Health Care

Poster design by Lutz Consulting, LLC

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