ALGIDEX AG® HYDROGEL GAUZE

high powered autolytic debridement

dry wound

The use of an ionic silver hydrogel impregnated gauze for autolytic debridement in three wounds of various etiologies

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study objective

Describe experience with an ionic silver hydrogel impregnated gauze dressing to clean and debride wounds in 3 patients.

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introduction

Debridement is necessary for proper wound healing[1,2]

- Removes necrotic tissue
- Reduces bioburden
- Stimulates granulation tissue formation and healing

Autolytic debridement is the body's natural process to remove necrotic tissue utilizing proteolytic enzymes[3]

- Driven by proteolytic enzymes produced by the body
- Highly specific, but slow process
- Wounds often need catalyst through interventional debridement
  - ➢ Sharp debridement is fast and effective but painful and risks damaging healthy granulation tissue [2,3]
  - ➢ Moisture Donating Dressings helps to soften necrotic tissue facilitating autolytic debridement but may not address bioburden[3]
  - ➢ Enzymatic debridement applies additional proteolytic enzymes to the wound but is expensive and can only be applied to necrotic tissue[3]
  - ➢ Maggot debridement utilizes maggots to remove sloughy and necrotic material. Effective but patient acceptance is limited due to aesthetic and psychological reasons[3]

Advantages to using the ionic silver hydrogel impregnated gauze* dressing

- Moisture donating, facilitates autolytic debridement
- Absorbs excess wound exudate
- Ionic silver in dressing reduces bioburden and wound odor[4]

methods

- **Retrospective case study approved by Blount Memorial Hospital Institutional Review Committee**
- **Identified 3 patients with 90 – 100% slough or necrotic tissue where study dressing was clinician's choice**
- **Dressing Protocol**

1. Wounds cleaned with sterile saline, sharps debrided as needed
2. Study dressing was cut to fit the wound bed as primary dressing with caution to avoid peri-wound tissue
3. Secondary dressing used to cover study dressing
4. Dressing changes occurred at least twice weekly for 7 – 14 days

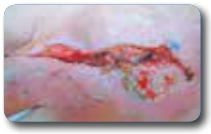
- **At each visit, wounds were photographed, measured, and characterized for presence of necrotic tissue and slough**
- **Wounds were transitioned to standard wound care procedures after two weeks[4]**

Representative Cases

case 1: traumatic hand wound

Day 0
Pre Sharp Debridement

Day 0
Post Sharp Debridement



Day 7
2 Applications

- **Three week traumatic wound caused by hydroveyor with no involvement of tendon or bone.**
  - ➢ Male 3rd decade of life; BMI 25.5
  - ➢ Prior smoker and no comorbidities
  - ➢ Prior treatment: Cleaning with soap and water and left open to air
- **Study dressing applied 2 times; foam and rolled gauze as secondary dressings.**

Wound Measurements:

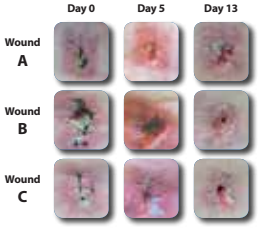
Day 0**					Day 4					Day 7				
W*	L*	D*	Area+	S/N	W*	L*	D*	Area+	S/N	W*	L*	D*	Area+	S/N
2.3	8.2	0.3	18.86	50%	2.5	6.5	0.3	16.25	N/A	1.7	5.7	0.3	8.55	10%

* - cm; + - cm2; S/N – Slough/Necrotic Tissue; ** - Wound Slough on day 0 before debridement was 100% necrotic tissue

- **Wound experienced 40% reduction in size and 90% granulation coverage in 7 days.**

case 2: three post-op spinal wounds

Day 0



- **Four week post-op wound following spinal surgery with infection present and wound dehiscence.**
  - ➢ Female 6th decade of life; BMI 36
  - ➢ Hypertension, Diabetes, and Hyperlipidemis
  - ➢ Prior treatment: Wounds cleaned with hydrogen peroxide and left open to air
- **Study dressing applied 3 times; adhesive foam as secondary dressing; systemic antibiotics to treat infection; sutures removed day 5 causing increase in wound size.**

Wound Measurements:

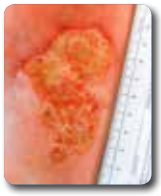
Wound	Day 0					Day 5**					Day 13				
	W*	L*	D*	Area+	S/N	W*	L*	D*	Area+	S/N	W*	L*	D*	Area+	S/N
A	1.5	1.2	0.1	1.8	100%	1.5	1.6	0.5	2.4	60%	2.2	1.6	0.3	3.52	30%
B	3.2	2.5	1.5	8	100%	4	3	1.5	12	10%	4.2	2.5	0.8	10.5	25%
C	3.5	1.5	0.4	5.25	100%	3.5	1.5	0.5	5.25	60%	3.7	3.2	0.2	11.8	45%

* - cm; + - cm2; S/N – Slough/Necrotic Tissue ** - Wound dimension increase due to dehiscence from suture removal

- **All three wounds increased granulation tissue coverage and decreased in wound depth between day 5 and day 13.**

case 3: calciphylaxis leg ulcer

Day 0



Day 2

- **Eight week calciphylaxis leg ulcer diagnosed by biopsy.**
  - ➢ Female 5th decade of life; BMI 49.1
  - ➢ Comorbidities: Stage III chronic kidney disease, livedo reticularis with ulceration, hypertension, diabetes mellitus, neuropathy, anemia, myasthenia gravis
  - ➢ Prior treatment: Vaseline, triple antibiotic ointment, gauze
- **Study dressing applied three times; hydrogel and foam adhesive used as secondary dressings.**

Wound Measurements:

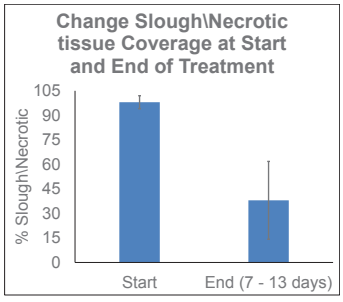
Day 0					Day 2					Day 8				
W*	L*	D*	Area+	S/N	W*	L*	D*	Area+	S/N	W*	L*	D*	Area+	S/N
4.9	6.7	0.3	32.83	90%	4.4	6.5	0.3	28.6	85%	4.0	6.5	0.3	26	80%

* - cm; + - cm2; S/N – Slough/Necrotic Tissue

- **Difficult to treat calciphylaxis wound experienced 21% reduction in size and 10% increase in granulation coverage in 8 days.**

Excellent Autolytic Debridement Observed with Study Dressing*

- Wound slough\necrotic tissue coverage decreased on average by 60%.
- Slough\necrotic tissue replaced by healthy granulation tissue.
- Observed debridement with study dressing helped convert wounds to healing wounds.



conclusions

- **Study dressing* aided in effective removal of necrotic and slough from wound bed simplifying sharps debridement.**
  - ➢ An increase in granulation tissue coverage and overall improvement in condition was observed for all three cases.
  - ➢ Case 1 and 3 had a 40% and a 20% reduction in wound surface area in only 7 and 8 days.
  - ➢ All Case 2 wounds experienced a decrease in depth after wound dehiscence with suture removal.
- **Dressing has been used for cleaning and debridement in over 70 wounds to date.**
  - ➢ Successfully used on a wide variety of wounds.
  - ➢ Easy to apply and remove.
  - ➢ The use of an additional hydrogel as a secondary dressing in wounds with low exudate has proven beneficial to treatment regime.
  - ➢ Clinical experience indicates that pain is reduced compared to other dressings.
- **The dressing provides an effective, economical, and readily available first line product for debridement option in advanced wound care.**

***Algidex Ag Hydrogel Gauze (DeRoyal Industries, Inc. - Powell, TN)**

References – **1:** Teot. "Surgical Debridement," in Surgical wound healing and management. (2007), 45 -52. **2:** Cruz et al. J. Paediatr. Child Health. (2013) 49, E397-404 **3:** Enoch and Harding. Wounds. (2003); 15(7). **4:** Sibbaid et al. Wounds UK (2007), 25 – 46, 3.2

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