

# Early Clinical Experience Using an ECM Scaffold with Ionic Silver in Diabetic Patients with Lower Extremity Ulcers

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## Introduction

Diabetes mellitus (DM) can cause the development of diabetic foot ulcerations (DFU)<sup>1</sup> that are at high risk of infection. Advanced wound management strategies can be used to achieve both wound closure and infection prevention. Silver (Ag) ions have been reported to disrupt vital processes within microbial cells.<sup>2</sup> This case series presents early clinical experience with an ovine ECM-Ag\* scaffold on diabetic patients with high-risk lower extremity ulcers.

## Methods

Six patients with diabetic ulcers were treated with ECM-Ag technology. The affected areas were cleaned and debrided then ECM-Ag was applied to the tissue and covered with GV/MB<sup>†</sup> foam and gauze. ECM-Ag application was repeated every 3-7 days or as required for 3 to 8 weeks.

## Conclusions

ECM-Ag led to improved granulation tissue and an average 59% reduction in wound size across the treatment group (n=6) at 4 weeks. Additionally, none of the wounds became infected during treatment with ECM-Ag. ECM-Ag is a new and useful tool for the management of high-risk DFUs.

## References and Disclosures

- Hobizal KB and Wukich DK (2012). "Diabetic foot infections: current concept review." *Diabetic Foot & Ankle* 3: 10.
- Leaper, D.J. (2006). "Silver dressings: their role in wound management." *Int Wound J* 3(4): 282-294.

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\*Endoform Antimicrobial Dermal Template; <sup>†</sup>Hydrofera Blue; www.appulsemed.com

## Results

### Case Study 1

**Patient:** 68 year old male  
**Medical History:** Type 2 DM, gangrene to 4<sup>th</sup> toe and infected wound on foot  
**Wound Description:** Diabetic ulcer to dorsal foot to plantar area, tendon exposed and 70% granulation

**Week 0:**  
 19 x 3.5 cm.  
 ECM-Ag,  
 GV/MB.



**Week 1:**  
 18.5 x 3 cm.  
 Hydrogel,  
 ECM-Ag,  
 GV/MB.



**Week 3:**  
 17 x 1.5 cm.  
 Debridement,  
 Hydrogel,  
 ECM-Ag,  
 GV/MB.



**Week 6:**  
 14 x 1 cm.  
 Wound size  
 reduced by  
 80%



### Case Study 2

**Patient:** 65 year old male  
**Medical History:** Type 2 DM, thrombotic microangiopathy  
**Wound Description:** Trans-metatarsal amputation (Dwight Newton)  
**Previous Treatments:** Wet to dry dressing

**Week 0:**  
 6.3 x 7.3 cm.  
 ECM-Ag,  
 GV/MB.



**Week 3:**  
 6 x 7 cm.  
 ECM-Ag,  
 GV/MB.



**Week 6:**  
 6 x 7 cm.  
 Wound size  
 reduced  
 by 9%



### Case Study 3

**Patient:** 65 year old female  
**Medical History:** Type 2 DM, osteomyelitis  
**Wound Description:** Macerated wound edge and periwound area, pale pink tissue wound bed, 20% yellow slough  
**Previous treatment:** NPWT, ORC/Collagen, collagenase ointment, ORC/collagen/Ag, honey, topical antibiotic and disinfectant

**Week 0:**  
 6.5 x 6.5 cm.  
 Debridement,  
 ECM-Ag,  
 GV/MB.



**Week 5:**  
 4 x 6 cm.  
 Debridement,  
 ECM-Ag,  
 NPWT.



**Week 8:**  
 2.3 x 5 cm.  
 Epithelialized with beefy red tissue. Mild maceration of wound edge.  
 Wound size reduced by 72%



### Case Study 4

**Patient:** 85 year old female  
**Medical History:** Type 2 DM, suffered a knee contusion due to a fall  
**Wound Description:** 100% adherent black eschar 4 x 2 cm  
**Previous treatment:** Debridement, gel matrix

**Week 0:**  
 4 x 2.5 cm.  
 Debridement,  
 ECM-Ag,  
 GV/MB.



**Week 1:**  
 4 x 2.5 cm.  
 Debridement,  
 ECM-Ag,  
 GV/MB.



**Week 5:**  
 1.5 x 1 cm.  
 Wound size  
 reduced by 85%

