

Multi-Center Evaluation of an Advanced Extracellular Matrix Technology for the Management of Chronic Wounds – A Canadian Experience

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INTRODUCTION

Advanced Extracellular Matrix (ECM) technologies for wound care are known to act on all phases of wound healing, by providing a provisional scaffold to stabilize the wound bed, modulate wound proteases and rebuild damaged tissue. This study aimed to clinically evaluate an ECM technology for the management of chronic wounds across different Canadian care settings.

METHODS

Wound management was undertaken across various care settings, including in-patient, out-patient and home health. All wounds were managed with best practice, including debridement, maintenance of a moist wound environment and appropriate compression and off-loading as standard of care. At some point of care wounds were managed with an ECM[®], applied daily-7 days (mostly once or twice a week) to the wound bed. Wounds were visually inspected, imaged and measured over the course of management with ECM.

RESULTS

A total of 33 wounds (n=30; participants aged 18-98 years) were enrolled in the study with different types of wounds: DFU's (10), PI's (8), skin tear (1), pilonidal sinus (2), necrotizing fasciitis (1), venous leg ulcers (6), dehisced surgical (4) and donor site (1). Most wounds showed improved healing rates and decreased frequency of dressing changes when managed with ECM compared to standard of care. Times to wound closure was in average 35 days (from 7 to 65 days). The ECM technology was easy to apply to wounds and once hydrated in the wound bed the ECM conformed to the wound bed and could be cut and packed as required by the specific wound. No adverse events observed.

Conclusion

This represents a Canadian evaluation of ECM for the management of wounds. As previously described for this product, improvements to the granulation tissue were observed, and otherwise stalled chronic wounds began to resolve [1, 2]. The availability of this advanced technology to Canadian wound specialists provides another tool for the management of these complex pathologies.

REFERENCES AND DISCLOSURES

Product was provided by Aroa Biosurgery Limited (New Zealand); #Natural Dermal Template (Aroa Biosurgery Limited, New Zealand).

- Bohn, G.A. and K. Gass, Leg ulcer treatment outcomes with new ovine collagen extracellular matrix dressing: a retrospective case series. *Adv Skin Wound Care*, 2014, 27(10): p. 448-54.
- Bohn, G.A., et al., Proactive and Early Aggressive Wound Management: A Shift in Strategy Developed by a Consensus Panel Examining the Current Science, Prevention, and Management of Acute and Chronic Wounds. *Wounds*, 2017, 29(11): p. S37-S42.

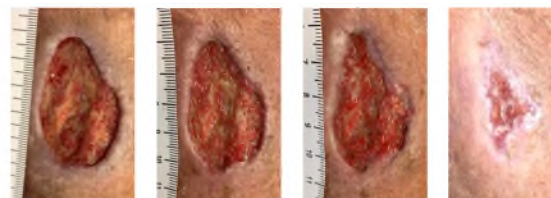
Wounds closed:
70%
(By week 12;
n=23/32)

**Average %
wound size at 4
weeks:**
36%
(SD=33%; range,
0% to 96%)

**'Respondents' at 4
weeks:**
63%
(>50% reduction in
area at 4 weeks;
n=20/32)

CASE 1: Full Thickness Wound

Patient: 67 Year old female with profound cellulitis on left leg and foot, resulting in blistering on dorsal aspect of foot. Wound deteriorated and became a black eschar.
Medical History: Atrial fibrosis, aortic valve sclerosis, chronic CHF, rheumatoid arthritis, CA bladder, chronic kidney disease, on dialysis (MWF) and MPGN.
Previous Treatments: Silver barrier dressing and hydrogel.



Week 0: 4.6 x 2.7 cm. Thin layer of slough present. Wound very painful touch or debride.

Week 2: 4.5 x 2.5 cm. Granulation tissue evident, reduction in pain reported.

Week 4: 4.2 x 2.5 cm. Granulation tissue 100%. Edges flattened and minimal pain reported.

Week 10: 2.3 x 1.0 cm. Reepithelialization occurring.

CASE 3: Lower Leg Trauma Wound

Patient: 82 Year old female with full thickness, fascial plane noted in some areas, painful – very light compression.
Medical History: Rheumatoid arthritis, COPD, atrial fibrillation, smoker – approx. 10 cigarettes/day.
Previous Treatments: GV/MB PVA foam, silver barrier dressing, hydrogel.



Week 0: 8.0 x 3.0 cm. Minimal granulation tissue observed. Has mixed arterial and venous lower leg issues. Very painful (8/10). ECM, HFB & Foam and single layer compression applied.

Week 8: 3.8 x 3.0 and 1.6 x 1.5 cm. Improved granulation tissue and comfort level – less pain.

Week 19: 1.3 x 0.5 cm. 100% granulation tissue and no pain.

CASE 2: Surgical Wound → Chronic Wound

Patient: 54 Year old female with Celiac disease, hypertension, idiopathic neutropenia. Surgical repair of left resulted in 8 week old chronic wound with dry eschar.
Previous Treatments: Patient applied polysporin.



Prior Treatment: Conservative sharp debridement to eschar. Treated with iodine.

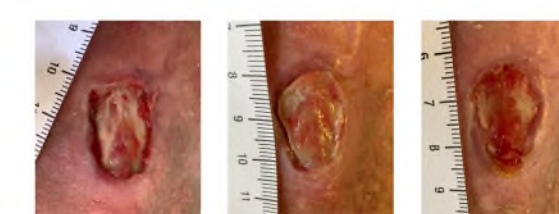
Week 0: 5.8 x 2.0 cm. Full thickness wound. 10% slough. 90% granulation tissue. Treated with ECM, GV/MB and light compression sock.

Week 2: 3.8 x 1.7 cm. 100% granulation tissue.

Week 4: Closed.

CASE 4: Pressure Injury

Patient: 55 Year old male discovered a pressure injury to right anterior ankle after removal of a cast used to treat a right tibial plateau fracture. Traditional treatment and dressing for 10 weeks. Wound was debrided and treated with ECM and HFB weekly.
Medical History: Rheumatoid arthritis,



Week 0: 2.2 x 1.5 cm. Exposed tendon. Rolled wound edge. ECM & HFB applied weekly.

Week 2: 2.2 x 1.5 cm. ECM incorporating into wound bed.

Week 4: 2.0 x 1.4 cm. Granulation tissue, attached wound edge.