

First Reported Use of Lyophilized Human Amnion Chorion Membrane (LHACM*) in the Treatment of a Diabetic Foot Ulcer in a Charcot Patient

Megan Oltmann DPM, FACFAS¹
Carol Devlin PhD RN RNFA CNOR²
SAWC Fall 2023

BACKGROUND

Five-year mortality risk for patients with Charcot foot rivals the pooled all cancers risk and outnumbers the breast cancer five-year risk of mortality.¹ Diabetic foot ulcers (DFUs) affect 19% to 34% of patients with diabetes and continue to challenge clinicians.² After four weeks of the standard of care (SOC), with less than 50% surface area reduction, wounds, including DFUs, are considered chronic.^{3,4}

Current recommended guidelines suggest that advanced therapies, including placental-based allografts, be considered for chronic wounds.^{5,6} LHACM, a new, **novel tri-layer placental-based allograft** intended for deeper and **complex wounds**, is presented in this case study.

GOALS

To provide a barrier that supports the healing cascade and protects the wound bed to aid in the development of granulation tissue for patients with **complex health problems** and are at **high risk** for wound complications, including **amputation**

CASE HISTORY

A 64-year-old male was referred for evaluation of a chronic Grade III Wagner DFU three months after onset. **The patient refused amputation.** The patient's healthcare history includes diabetes mellitus with neuropathy, Charcot with reconstruction, hypertension, hypercholesterolemia, asthma, and a previous DFU on the affected foot. He is independent, lives alone, and denies smoking or alcohol use.

SOC, which included weekly sharp curette debridement, a multitude of dressings and advanced care therapies, 30-40 mmHg compression wrap, and an offloading insole shoe[†] was employed for 15 weeks without resolution. Advanced therapies included other allografts and dressings (alginate wound dressing and collagen dressing[‡]).

LHACM USE

On the day of LHACM initiation, the wound measured 0.8 x 2.5 x 0.2 cm before debridement. Following debridement, the wound measured 1.0 x 2.5 x 0.2 cm. Weekly visits were scheduled; however, the patient missed weeks three and six due to lack of transportation.

At each visit, the patient underwent sharp curette debridement and LHACM application.

The wound was dressed with antimicrobial primary dressing[§] plain over silicone wound dressing[¶] that was secured with breathable adhesive strips[#], 30-40 mmHg compression wrap, and an offloading insole insert in a surgical shoe.



Figure 1: Wound dimensions **decreased** from 1.0 x 2.5 cm to 0.5 X 1.2 cm in **one week**. In **five visits** over seven weeks with serial LHACM application **complete closure** was achieved.

RESULTS

The **wound healed** after **five LHACM applications** and seven weeks (Figure 1).

CONCLUSION

LHACM is a new, novel human placental-derived product that is easy to handle and is repositionable while dry or hydrated. This complicated Wagner III DFU, in a polymorbid patient, healed after five applications of LHACM following failed conservative care and failed use of a multitude of other advanced therapies. The patient quickly returned to normal daily activities, which included driving and independent living.

REFERENCES

1. Armstrong DG, Swerdlow MA, Armstrong AA, Conte MS, Padula WV, Bus SA. Five year mortality and direct costs of care for people with diabetic foot complications are comparable to cancer. J Foot Ankle Res. Mar 24 2020;13(1):16. doi:10.1186/s13047-020-00383-2
2. Singh N, Armstrong DG, Lipsky BA. Preventing Foot Ulcers in Patients With Diabetes. JAMA. 2005;293(2):217-228. doi:10.1001/jama.293.2.217
3. Atkin L, Bucko Z, Conde Montero E, Cutting K, Moffat C, Probst A, Romanelli M, Schultz GS, Tettelbach W. Implementing TIMERS: the race against hard-to-heal wounds. J Wound Care 2019;28(3 Suppl 3):S1-S49
4. Sheehan P, Jones P, Caselli A, Giurini JM, Veves A. Percent change in wound area of diabetic foot ulcers over a 4-week period is a robust predictor of complete healing in a 12-week prospective trial. Diabetes Care. 2003;26(6):1879-1882.
5. Snyder D, Sullivan N, Margolis D, Schoelles K. AHRQ Technology Assessments. Skin Substitutes for Treating Chronic Wounds. Agency for Healthcare Research and Quality (US); 2020.
6. Wu S, Carter M, Cole W, et al. Best practice for wound repair and regeneration use of cellular, acellular and matrix-like products (CAMPs). J Wound Care. Apr 1 2023;32(Sup4b):S1-s31. doi:10.12968/jowc.2023.32.Sup4b.S1

AUTHOR AFFILIATIONS

1. University Hospitals Harrington Heart & Vascular Institute, Cleveland, OH
2. MIMEDX Group, Marietta, GA

KEY

*LHACM = EPIEFFECT (MiMedx Group, Inc, Marietta, GA)
† Offloading insole = PegAssist™
‡ Collagen dressing = Promogran PRISMA™
§ Antimicrobial primary dressing = Aquacel®
¶ Silicone wound dressing = Mepitel®
Breathable adhesive strips = Steri Strip™

DISCLOSURES

Poster development supported by MIMEDX Group, Inc.