

Treatment of Large Painful Lower Extremity Ulcer with Edema and Deep Vein Thrombosis (DVT) Using Transforming Powder Dressing (TPD)

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Background

The management of lower extremity (LE) wounds in patients with chronic edema is challenging. Edema may be present for many reasons, including deep venous thrombosis (DVT), which can result in morbidity and mortality if not properly treated.^{1,2} Skin damage, prolonged healing times, infection, malodor, and diminished quality of life (QoL) all may develop from excessive wound exudate.³

Pain, another common issue in LE wounds like venous ulcers, as well as in cases of LE chronic edema, can negatively impact patient compliance with seeking wound care, further reducing time to healing and overall QoL.

Results

The following effects were noted post-TPD treatment:

- Wound was fully healed within 28 days with three applications of TPD
- Pain score (based on the validated Visual Analog Score) reduced from 9/10 to 3/10 after the first application of TPD
- TPD was reapplied 1 week later, and pain score was reported as 0-1/10
- Additional TPD was applied 6 days later, and pain score was reported as 0
- The wound was observed to be fully healed two weeks later without any further applications of TPD



Case Overview: Methodology

A 39-year-old male presented with DVT, chronic RLE edema, and a large leg ulcer. He sought treatment only after he was unable to walk.

Treatment Course:

- Circumferential excisional debridement through muscular fascia was performed resulting in a wound area of 1,350 cm²
- Negative pressure wound therapy (NPWT) was applied post debridement
- A second debridement was performed four days later and NPWT treatment was continued
- A Split thickness skin graft (STSG) procedure was conducted two days later, and the graft was covered with a NPWT device
- Patient reported high levels of pain, requiring management with hydromorphone, oxycodone, and hydrocodone
- After 2 weeks NPWT therapy was discontinued, and the patient was transitioned to Transforming Powdered Dressing (TPD*) and discharged from the hospital
- Pain scores, wound dimensions and number of dressing changes were tracked

*Altrazeal® Transforming Powder Dressing (USA)

Materials

TPD is a novel powder dressing comprised primarily of biocompatible polymers (same as those used in contact lenses). Upon hydration with saline, TPD granules aggregate to form a moist, oxygen-permeable matrix that protects the wound from contamination while helping to manage excess exudate through vapor transpiration, and some negative pressure effects on the wound. Once applied, TPD may be left in place for up to 30 days and additional powder may be added ("topped off") as needed without requiring primary dressing changes. Simple secondary dressings may be used in areas of high exudation or friction. TPD dries and flakes off as the wound heals.

Conclusion

Based on the outcome of this challenging case, which included significant initial comorbidities and high pain levels, treatment of patients with LE wounds associated with edema and DVT which are refractory to SOC and advanced wound care therapies should be considered for treatment with TPD.

References

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3. Aviles Jr, F; Managing the "Weepy Leg" of Chronic Wound Edema. Wound Care Learning Network; September 2019; <https://www.hmpgloballearningnetwork.com/site/twc/articles/managing-weepy-leg-chronic-wound-edema>

Acknowledgement: This poster was developed in collaboration with ULURU Inc.