

TRANSFORMING POWDER DRESSING IN THE TREATMENT OF DIABETIC FOOT ULCERS

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INTRODUCTION

The management of chronic diabetic foot ulcers (DFU) is a multifaceted dilemma that can lead to serious complications and death if not addressed in an effective manner. Clinicians must account for the presence of infection, vascular sufficiency, neurosensory deficits, and patient compliance to treatment modalities. To meet such challenges, clinicians must have safe, effective, and efficient treatment options. The use of a transforming powder dressing (TPD*) has been demonstrated to be such a tool in the treatment of DFUs as illustrated in this case series.

METHODS

Two elderly patients with multiple comorbidities and nonhealing DFUs being treated with standard of care (SOC) wound dressings were converted to treatment with TPD.

TPD is an extended wear, novel powder dressing comprising primarily of biocompatible polymers similar to those used in contact lenses. Upon hydration with saline, TPD granules aggregate to a form moist, oxygen-permeable matrix that protects the wound from contamination while helping to manage excess exudate through vapor transportation. Once applied, TPD may be left in place for up to 30 days and additional powder may be added (“topped off”) as needed. Simple secondary dressings may be used in areas of high exudation or friction. TPD dries and flakes off as the wound heals.

RESULTS

Patient 1:

- 67-year-old Asian male with PMH of DM, CKD, CAD and HTN
- Initial Treatment:
 - Treatment of a left sub-metatarsal wound after undergoing a left hallux amputation due to complications of a DFU
 - Wound stagnant for four weeks (2.63cm² at baseline)
- Post TPD Results:
 - Wound size reduced by 81% to 0.49cm² with five applications



Patient 2:

- 86-year-old Hispanic male with PMH of DM, HTN, CKD, CAD, HLD
- Nonhealing right sub-metatarsal wound as a result of right hallux amputation, which was complicated by a post-surgical infection that required additional surgical debridement
- Initial Treatment:
 - Wound size reduced significantly with SOC but closure was difficult to achieve (0.92cm² at baseline)
- Post TPD Results:
 - Healed with four applications by week 8



DISCUSSION

Both wounds were successfully treated with TPD. Both subjects experienced improvements in healing rates of previously stagnant wounds. The use of TPD was well-tolerated by both subjects and no adverse events were reported. Effective management of chronic DFUs is an immense challenge and the use of an extended wear, novel transforming powder dressing is a viable treatment option as demonstrated by this case series.