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## INTRODUCTION

- Bacterial burden exceeding the chronic inhibitory bacterial load (CIBL; ~10<sup>4</sup> CFU/g) is associated with delayed healing in chronic wounds such as diabetic foot ulcers (DFUs).
- Elevated microbial burden and biofilm formation can impair host immune responses and perpetuate inflammation, preventing progression through normal wound healing phases.
- Standard wound management often requires repeated debridement to remove devitalized tissue and control infection.
- A topical desiccating agent (TDA) has been proposed as an alternative debridement modality that dehydrates tissue, disrupts biofilm, and rapidly reduces bacterial burden while sparing intact skin.

## METHODS

- Data from de-identified patients were collected from admission to different timepoints after TDA application.
- A total of 14 patients reviewed in this case series, consisting of 71% males and 29% females, ranging from 35 to 72 years of age, with a median age of 55.9. All participants had a known history of poorly controlled Type 2 Diabetes Mellitus between 4 and 25 years, with a median of 14.8.
- Other comorbidities included hypertension (21%), cataracts (14%), vascular disease (14%), and hyperlipidemia (14%). 64% of the patients had a history of smoking. On admission, all patients' labs revealed leukocytosis, anemia, hyperglycemia, hyponatremia, elevated CRP, and elevated HbA1c of at least 9%.

**Table 1: Key Inclusion and Exclusion Criteria**

INCLUSION CRITERIA	EXCLUSION CRITERIA
<ul style="list-style-type: none"> <li>• A known history of poorly controlled T2DM</li> <li>• Chronic nonhealing diabetic foot ulcers (DFUs)</li> <li>• Treated with TDA</li> </ul>	<ul style="list-style-type: none"> <li>• HbA1c &lt;9%</li> <li>• Newly diagnosed T2DM</li> <li>• Non-healing wounds in locations other than the foot</li> </ul>

## RESULTS



**Figure 1:** Patient 12 Phases of Treatment, Wound A (top) and Wound B (bottom), from left to right: (1) Before TDA and Debridement (2) After TDA and Debridement (3) Day 1 Post Operation (4) Day 7 Post Initial Operation

**Table 2: Patient History with Wound Location**

Participant Number	Primary Wound Location	Smoking History	Pack Years	Years with T2DM
1	Right heel	Yes	45	23
2	Plantar surface of left great toe	Yes	15	20
3	Dorsum of right foot	No	N/A	25
4	Dorsum of left foot	No	N/A	25
5	Dorsum of left foot	No	N/A	10
6	First toe of right foot	Yes	30	4
7	Fifth toe	Yes	10	25
8	Lateral right foot	Yes	30	6
9	Fifth toe of the left foot	No	N/A	10
10	Right foot	Yes	100	10
11	Sole of left foot	Yes	30	10
12	Right foot	Yes	20	15
13	Dorsum of left foot	No	N/A	16
14	Sole of right foot	Yes	30	8

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All DFUs demonstrated complete granulation following a single application of TDA, regardless of initial wound severity. Rapid formation of healthy granulation tissue paralleled healing trajectories previously reported following sharp surgical debridement. Among the 14 patients with chronic DFUs, clinical endpoints included split-thickness skin grafting, wound approximation, or secondary healing. Seven patients underwent grafting, two achieved closure with approximation, and five wounds resolved without grafting. Leukocytosis resolved in all patients within 21 days, with most resolving by day 14, suggesting effective infection control and wound bed preparation.

## CONCLUSIONS

**TDA-based chemical debridement appears to be an effective adjunct for managing chronic DFUs, promoting rapid granulation and reducing bacterial load within the wound bed. Preliminary evidence also suggests potential antimicrobial activity in the periwound area, though controlled studies are required to determine its clinical significance. These findings support further exploration of TDA as a single-application debridement option that may enhance outcomes and shorten healing timelines for patients with chronic, nonhealing DFUs.**



**Figure 2:** TDA Product

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