Evaluation of the Cost Effectiveness of Transforming Powder Dressing to Standard of Care Wound Dressings in the Treatment of Venous Stasis Ulcers

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Symposium on Advanced Wound Care (SAWC)
Fall 2024 Meeting | Las Vegas, NV

INTRODUCTION

Venous stasis leg ulcers (VLU) affect 1-2% of the general population and approximately 3-4 percent of patients more than 65 years old.[1] After healing, VLUs have a recurrence rate of 22% within 3 months, 57% within 12 months, and 78% within three years.[1] Wound care is a medical necessity in this patient population, costing $14.9 billion annually in total direct medical costs or $6,391 per patient in the United States.[2] An abundance of wound treatment options are available ranging from conventional dressings to biologics, and negative pressure wound therapy. However, all these commonly used alternatives require frequent and painful dressing changes, draining precious medical resources. Optimizing wound care treatment by decreasing healing time, frequency of dressing changes, and associated healthcare costs would reduce overall costs and improve outcomes for both the patient and healthcare systems.

METHODOLOGY

This case series examined three patients with recurring VLUs. Treatment history and associated costs for each of their treatments relative to standard of care (SOC), including various wound supplies, estimated labor time and related costs. Each patient was transitioned to Transforming Powder Dressing (TPD*) and the associated costs, including labor, were calculated and compared to other standard of care VLU treatment costs. TPD is a powder dressing comprised of biocompatible polymers like those used in contact lenses, that after hydration, forms a flexible and durable matrix which can be left on for an extended time (up to 30 days).

RESULTS

TREATMENT COSTS

	TPD	SOC*	SAVINGS	% SAVINGS
Average Costs / Week				
Labor + Travel	$22.2	$96.2	$74.0	77%
Material	$56.1	$78.3	$22.3	28%
Average Costs / Week	**$78.3**	**$174.5**	**$96.2**	**55%**
Average Treatment Period (Weeks)	15	28		
Cost Over Treatment Period	**$1,181.8**	**$4,816.4**	**$3,634.6**	**75%**

*Includes moist wound dressing and compression therapy. TPD arm includes TPD with compression therapy.
Assumptions: Wound care labor costs based on average wound care nurse salary per hour from salary.com. Costs of cleaning supplies and dressings based on online medical supply distributor. Costs related to reduced debridements and other surgical interventions with TPD are not considered in the analysis.

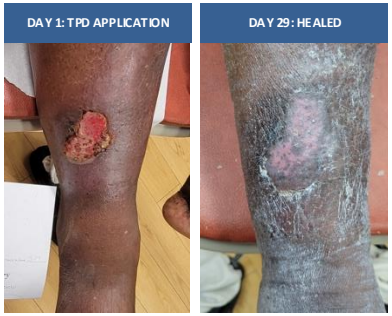
When compared to SOC treatment prior to utilization of TPD, ***estimated wound care costs were reduced by over 55% per week*** with TPD treatment relative to SOC. ***Dressing change frequency, related time and associated travel time was reduced by 77% per week. Material costs were reduced by 28% per week. Post-discharge visits were also reduced, from three times per week to once weekly***, versus traditional standard of care.

All cost calculations assume no improvement in healing time relative to SOC. Assuming an average healing time of 15 weeks with TPD versus 28 weeks with SOC based on a retrospective case review of VLU's treated with TPD at our facility (n=7), ***total costs over the entire treatment period would be 75% lower with TPD than SOC***.

ILLUSTRATIVE CASES

PATIENT 1: 61-year-old male with a pmhx of hypertension, hyperlipidemia, CVA (2019 with residual left sided weakness) presenting with venous insufficiency
Wound Duration Before TPD: 4 months
TPD Treatment: One application, three weekly top-offs

PATIENT 2: 76-year-old male with a pmhx of HTN, HLD, DM, CVA presents with venous insufficiency with a 6cm venous leg ulcer to the left shin
Wound Duration Before TPD: 7 days
TPD Treatment: One application, two top-offs



PATIENT 3: 74-year-old male with a pmhx of HTN, COPD, AS, CAD presenting with venous insufficiency with a medial left lower extremity venous leg ulcer
Wound Duration Before TPD: 30 days
TPD Treatment: One application over seven days

DISCUSSION

When compared to VLU treatment prior to utilization of TPD, estimated costs of wound care were reduced by over 56% per week during the TPD treatment period relative to SOC, due to decreased frequency of dressing changes and related material costs.

REFERENCES & ACKNOWLEDGEMENTS

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Acknowledgements: This poster was developed in collaboration with Altrazeal Life Sciences Inc. All clinical cases and analyses were performed independently by the authors and no compensation was paid.

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