

# A CASE REVIEW OF CHALLENGING LOWER EXTREMITY WOUNDS IN THE DIABETIC VETERAN POPULATION HEALED WITH *LEPTOSPERMUM* HONEY

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## OBJECTIVE

*Leptospermum Honey\** (LH) provides moist healing which assist in autolytic debridement, creates an osmotic effect that helps facilitate wound cleansing and autolytic debridement and reduces pH which provides a more suitable environment for wound healing. These characteristics also inhibit microorganism growth reducing the incidence of infection. The reduction of the pH of the wound by LH and the hyperosmolarity effect provides antibacterial action which reduces the chances of contracting infection.<sup>1</sup> It is estimated that 16 million Americans are diagnosed with diabetes with one in every four patient being a Veteran. A wound in a diabetic patient carries a higher risk of infection and amputation.<sup>3,4</sup>

## METHOD

Four patient cases were reviewed to illustrate the effectiveness of LH in 3 differing difficult wounds: a traumatic laceration to the leg, a chronic venous leg ulcer, and two patients with full-thickness burns to the foot. All wounds were initially treated with standard dressings.

## CASE REPORT

Patient 1 was initially treated with petroleum dressing and gauze for 3 weeks prior to initiating LH. The patient had developed a large hematoma with foul odor. Treatment was initiated with a daily combination of LH Gel and Hydrogel colloidal sheet impregnated with *Leptospermum Honey*. The patient was treated for 12 weeks resulting in complete closure of the wound.

Patient 2 presents with a 5 month non-healing venous leg ulcer, was initially treated with zinc, silver sulfadiazine, and collagenase without significant progress prior to initiating LH. Treatment was initiated with a daily combination of LH gel for a total of 10 weeks then was changed to hydrogel colloidal sheet impregnated with LH for 9 weeks. The patient was treated for 19 weeks resulting in complete closure of the wound.

Patients 3 and 4 sustained burns to the feet with patient 4 sustaining full-thickness burns with thick dry eschar formation. Both patients were initially treated with topical silver sulfadiazine for 4 weeks without resolution or reduction of the wound. Treatment for both was initiated with a daily combination of LH gel and hydrogel colloidal sheet impregnated with LH. Patient 3 was treated for 7 weeks then was changed to the gel only for 3 weeks resulting in complete closure of the wound. Patient 4 was treated for 20 weeks resulting in complete closure of the wound.

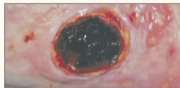
## RESULTS

LH was utilized to closure on all four wounds with healing time averaging 15 weeks without the need for surgery or other adjunctive therapies and without reported side-effects. None of the patients were placed on antibiotics or treated for infection during the usage of LH.

## CONCLUSION

LH expedites healing rates in the challenging diabetic lower extremity wounds reducing cost of care as compared to standard dressing (silver sulfadiazine and silver dressings) and did not require the use of antibiotics.

### PATIENT 1



9/18/15: 3.5 cm x 3.5 cm x 1.5 cm

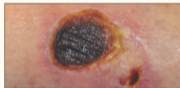


10/21/15: 3.0 cm x 2.3 cm x 0.2 cm

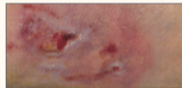


12/14/15: Resolved

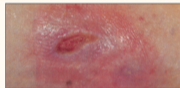
### PATIENT 2



2/10/15: 2.7 cm x 2.3 cm

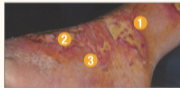


7/14/15: 0.3 cm x 0.2 cm x 0.1 cm



9/18/15: Resolved

### PATIENT 3



11/19/15: Wound 1 – 8 x 5 cm / Wound 2 – 4 x 6 cm / Wound 3 – 2.5 x 4.5 cm



1/7/16: Wound 1 – Closed / Wound 2 – 2 x 1 x 1 cm / Wound 3 – 1.5 x 8 x 2 cm



1/27/16: All wounds were resolved

### PATIENT 4



7/16/15: Wound 1 – 4.4 x 2.4 cm / Wound 2 – 8 x 4 cm



10/27/15: Wound 1 – 1 x 0.5 cm / Wound 2 – 1.5 x 0.8 x 0.2 cm



11/7/15: Wound 1 and Wound 2 – resolved

PATIENT #	DATE	MEASUREMENT	% DECREASE	WEEKS SINCE STARTING LH
1	09/18/15	3.5 cm x 3.5 cm with 1.5 cm hematoma	N/A	N/A
	10/02/15	2.5 cm x 2.5 cm	49%	2
	11/03/15	2.6 cm x 1.4 cm	70%	7
	12/14/15	Resolved	100%	12
2	04/09/15	3.0 cm x 2.4 cm x 0.2 cm	N/A	N/A
	04/29/15	3.6 cm x 2.0 cm x 0.2 cm	0%	3
	07/14/15	0.3 cm x 0.2 cm x 0.1 cm	99%	14
	09/18/15	Resolved	100%	19
3	11/19/15	1st wound: 8.0 cm x 5.0 cm	N/A	N/A
		2nd wound: 4.0 cm x 6.0 cm		
		3rd wound: 2.5 cm x 4.5 cm		
	12/15/15	1st wound: 5.0 cm x 3.7 cm x 0.2 cm	54%	4
		2nd wound: 3.4 cm x 6.0 cm x 0.2 cm	15%	
		3rd wound: 2.5 cm x 3.0 cm	33%	
01/07/16	1st wound: Healed	100%		
4	07/16/15	1st wound: 4.4 cm x 2.4 cm	N/A	N/A
		2nd wound: 8.0 cm x 4.2 cm		
	07/30/16	1st wound: 3.0 cm x 2.0 cm x 0.3 cm	43%	2
		2nd wound: 4.0 cm x 4.0 cm	52%	
09/01/15	1st wound: 3.0 cm x 1.0 cm x 0.2 cm	72%	11	
	2nd wound: 3.7 cm x 3.6 cm	61%		
	10/27/15	1st wound: 1.0 cm x 0.5 cm		53%
11/7/15	Resolved	2nd wound: 1.5 cm x 1.0 cm x 0.2 cm	96%	18
		Resolved	100%	20

References:

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