ACTIVE *LEPTOSPERMUM* HONEY FOR THE TREATMENT OF PARTIAL THICKNESS FACIAL BURNS: A CASE SERIES

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OBJECTIVE

Research suggests that Active *Leptospermum* Honey* (ALH) improves outcomes in patients with partial thickness burns by enhancing the healing and re-epithelialization rate and and producing favorable clinical outcomes.[1-3] This prospectively planned pilot study was IRB approved and designed to establish preliminary results for effectiveness and to inform for future large scale clinical trials. This case series study assesses the effectiveness of ALH Gel on time-to-heal, bacterial growth in the wound, patient satisfaction, and cost of treatment in patients with partial thickness facial burns.

METHODS

Seven patients (ages 7-64) with partial thickness facial burns were recruited from a northeastern U.S. burn center. Dressing changes with ALH, wound photography, and tests for the presence of exudate were performed daily. Bacterial growth was assessed via wound cultures on days 1 and 7 (+/- 2 days). Three physicians independently reviewed the daily photographs which were presented in a randomized order to minimize bias; they then assigned standardized ratings of wound healing. Patients completed a satisfaction survey at the end of treatment, and cost of treatment was calculated.

RESULTS

Time-to-heal ranged from three to 14 days (mean 8.1 days). Wound cultures revealed normal bacterial growth on days 1 and 7 for all patients. Patients rated ALH gel favorably, with the most common complaint of stickiness in five patients. One patient experienced transient burning on application that did not interrupt treatment. Average cost of treatment was $61.55 per patient.

CONCLUSION

Healing time was congruent with or better than what would have been expected with standard treatment using antimicrobial ointment. Further, despite no oral or iv antibiotic treatment, during the study time frame, wound cultures showed no abnormal bacterial growth. Finally, patients overall reported satisfaction with treatment. Our findings suggest that ALH is a clinically and economically valuable treatment for partial thickness facial burns.

References: 1. Molan, PC. The evidence and the rationale for the use of honey as a wound dressing. *Wound Practice and Research.* 2011;19(4):204-220. 2. Blair SE, Cokcetin, NN, Harry EJ, Carter DA. The unusual antibacterial activity of medical-grade *Leptospermum* honey: antibacterial spectrum, resistance and transcriptome analysis. *Eur J Clin Microbiol Infect Dis.* 2009;28(10):1199-208. 3. George NM, Cutting KF. Antibacterial honey (MEDIHONEY®): In-vitro activity against clinical isolates of MRSA, VRE, and other multiresistant gram-negative organisms including *Pseudomonas aeruginosa. Wounds.* 2007;19(9):231-236.

*MEDIHONEY® Active *Leptospermum* Honey Dressings, Derma Sciences Inc., Princeton NJ

Derma Sciences provided an educational grant to support this research. The information may include a use that has not been approved or cleared by the Food and Drug Administration. This information is not being presented on behalf of Derma Sciences.

Presented at SAWC Spring 2015, San Antonio, TX
0668701-1-EN

Two patients with thermal burn injuries treated with ALH at initial presentation, mid-treatment, and at study completion.

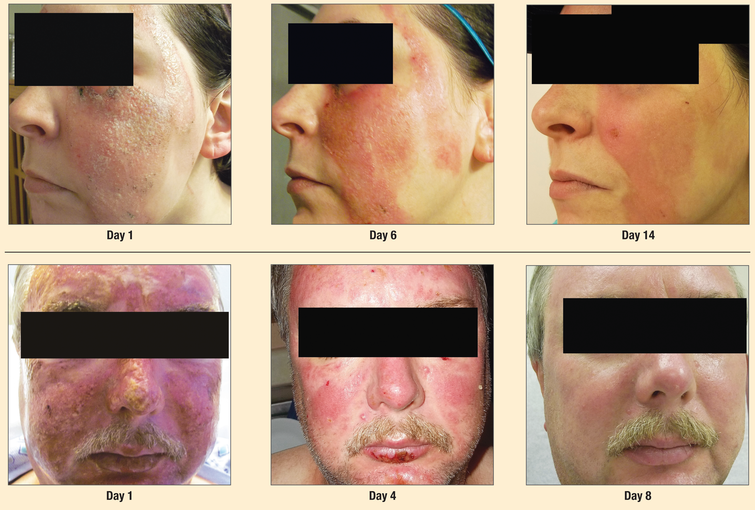

Figure 1. Physician Rating of Wound Status – Week 1

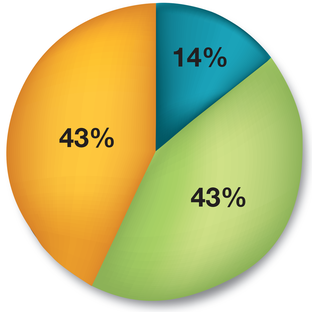

Figure 2. Distribution of Patient Responses Across Items for ALH Patient Care Satisfaction Questionnaire

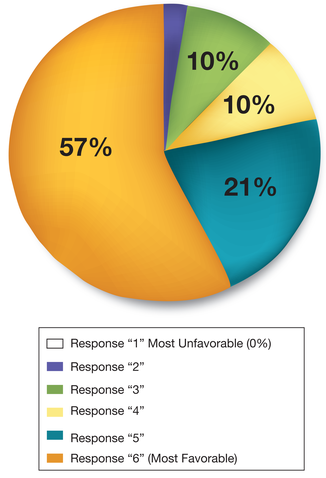

Table 1. Enrollment Criteria

Inclusion Criteria	Exclusion Criteria
• Patients presenting with a partial thickness burn injury on the face (i.e., a second degree burn injury involving the epidermis and dermis layers of the skin) • Burn injury occurred within 72 hours of enrollment	• Cognitive or language barriers that preclude completion of study measures • Burn injuries exceeding 40% total body surface area (TBSA) • Diagnosis of immunodeficiency or kidney disease • Receiving treatment that can create concerns with immunodeficiency or affect healing (e.g., chemotherapy, dialysis) • Currently pregnant • Known allergy to honey

Table 2. Individual Patient Characteristics and Outcomes

ID	Gender	Age	Burn Type	Total TBSA	Face TBSA	Co-Morbidities	Hospital Days	Enrollment Day	Prior Treatment	Healed Day	# of ALH tubes	Treatment Cost
1	Female	37	Thermal	4%	2%	Migraine; depression	1	3	None	13	3	$80.79
2	Male	25	Thermal	0.25%	0.25%	None	1	1	None	11	3	$80.79
3	Male	48	Thermal	7%	1%	Hypertension; hypercholesterolemia	3	3	None	5	2	$53.86
4	Female	7	Contact	2%	2%	None	0	2	Topical & oral antibiotic	7	1	$26.93
5	Female	64	Contact	1%	1%	Osteoporosis; vertigo; overactive bladder; mold allergy; irritable bowel	0	1	None	14	2	$53.86
6	Male	55	Scald	3%	1.50%	Atrial fibrillation; congestive heart failure	1	1	None	4	4	$107.72
7	Female	63	Scald	1%	1%	None	0	2	None	3	1	$26.93