Active *Leptospermum* Honey: Treatment for Various Lower Extremity Dermatologic Issues

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HISTORICAL USE OF HONEY

Historical documents show the use of medicinal honey in medieval Europe and by the ancient Egyptians. In today's world of strict regulations and FDA clearance, honey has emerged as an effective wound dressing. Recently, active *Leptospermum* honey impregnated calcium alginate dressings (HICADs) have been used to provide a moist wound environment to assist in the healing of wounds and provide an antibacterial barrier against wound pathogens[1]. Despite clearance for treating multiple types of ulcerations, active *Leptospermum* honey's unique characteristics make it useful in other scenarios such as skin irritations and diseases[2].

BACKGROUND

Active *Leptospermum* honey, a medical grade honey, has recently been cleared by the FDA in the United States for use as a wound and burn dressing*. Due to the indications and approved use, clinicians have mostly utilized the dressing on both diabetic and venous ulcers. Medical grade honey is naturally antibacterial and has a strong osmotic component which makes it an ideal topical therapy for a variety of dermatologic conditions.

PURPOSE

This poster will describe four cases using medical grade, active *Leptospermum* honey as an adjunct or sole treatment for a dermatologic condition. The alginate version of the honey dressing was used in the following cases: a digital infection following a pedicure, foreign body removal following an incision and drainage, super-infected tinea pedis, and pedal allergic contact dermatitis that had resulted in plantar skin sloughing. In each case, active *Leptospermum* (HICADs) were used to resolve an infection or soothe an irritation.

METHODS

A cohort representative of our general population was selected for this study. Active *Leptospermum* HICADs were applied every other day and covered with an absorbent dressing. Wound assessments were performed weekly.
The following data were collected: wound bed status, exudates levels, wound measurements, and patient's self-report of pain on a visual analog scale.

RESULTS

The active *Leptospermum* HICADs demonstrated superior ability to improve the wound bed, absorb exudates, decrease the wound size, and improve patients self-report of pain.

CONCLUSION / SUMMARY

HICADs are an effective, non-invasive, and painless treatment for a variety of dermatological conditions. The dressing is a safe adjunct to incision and drainage, long-term topical steroids, and oral antibiotics for localized conditions. Further studies are indicated to demonstrate usefulness for dermatological issues beyond ulcerations.

While FDA cleared the original dressing for mild to heavy exudative wounds, it is now available in different formulations. The product is increasingly useful for ulcers and other various dermatological conditions. We have yet to find the limit of what active *Leptospermum* honey will accomplish in the field of dermatology and wound care.

References:

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CASE 1

A 45-year-old female presented to the clinic with an infected second toe. A pedicure two months earlier resulted in an abscess with cellulitis. Incision and drainage had been performed in a primary setting with subsequent referral to an Infectious Disease specialist. The wound culture was positive for Methicillin-resistant staphylococcus aureus (MRSA). The patient presented to the Foot and Ankle Institute at Temple University School of Podiatric Medicine for further wound care. Persistent pain and swelling of the toe was noted despite antibiotic therapy. During the initial visit the necrotic tissue was debrided (Figure 1 and 2). An active *Leptospermum* HICAD was applied with an absorbent cover dressing. The patient was instructed to change the dressing every other day and to complete her course of antibiotic therapy. At her second office visit, her pain had dramatically decreased and her toe was clinically improved (Figure 3). Complete healing with HICADS was achieved by week 6. (Figure 4).

Fig. 1

March, 2008: Pre-debridement of toe infected during pedicure.

Fig. 2

Post-debridement of nail and dead tissue. HICAD initiated.

Fig. 3

Week two: edema, erythema, and exudate resolving.

Fig. 4

Week six: complete healing with good cosmetic outcome.

CASE 2

A 60-year old diabetic female presented to the Foot and Ankle Institute after sustaining a scrape from a wooden wall on the lateral aspect of her foot. Upon inspection, a small draining area was noted on the dorso-lateral aspect of the left foot. A small amount of purulence was expressed and the patient had immediate pain relief. She related that she had already completely removed a splinter from her foot. No foreign body could be palpated or extruded at the time. No foreign body was detected by X-Ray.
A HICAD with an absorbent cover dressing was applied to promote autolytic and osmotic driven debridement. Instruction for every other day dressing changes were provided. During the patient's second visit, as the HICAD was removed, a large splinter was extracted from the wound (Figure 5). The patient continued to use HICADs every other day. The wound was closed without incident (Figure 6) by the third visit.

Fig. 5

Feb 2008: Patient with splinter—after using HICAD for one week

Fig. 5A

Close-up of splinter.

Fig. 5B

Close-up of wound.

Fig. 6

Week two: complete healing after two weeks of HICAD use.

CASE 3

A 34-year-old non-diabetic male presented with inter-digital tinea that was malodorous and painful. The patient had not used any over the counter treatments or seen his primary doctor for this issue. He presented with severe maceration and ulceration that extended both plantarly and dorsally from the inter-digital spaces of both feet (Figures 7 and 8). Redness, swelling, malodor, pain, and serous drainage were present. A plan of care including oral antibiotic therapy and local wound care was developed. HICADs were applied every other day to the dorsal skin in combination with hyaluronic acid gel between the toes. On the follow up visit, the patient presented with dorsal and plantar areas healed (Figures 9 and 10).

Fig. 7

Initial presentation: super-infected tinea pedis (dorsal surface view)

Fig. 8

Initial presentation: super-infected tinea pedis (plantar surface view)

Fig. 9

Week three (dorsal view): rash completely resolved with use of HICAD.

Fig. 10

Same day as picture 11; plantar view

CASE 4

A 64-year-old male presented with draining painful blisters on the plantar aspect of both feet. A history of allergic contact dermatitis from shoe chemicals was previously confirmed by patch test and skin biopsy. The patient recently wore a new pair of work boots and developed a similar presentation as when diagnosed. The dermatitis was treated with an oral prednisone taper to calm down the skin and HICADs were prescribed to soothe the bullae that were draining and painful (Figure 11). One week later, the patient's complaint of pruritus, pain, and swelling of the plantar feet was resolved (Figure 12). The patient continued to use HICAD for one more week and then was converted to an emollient cream to protect the skin barrier. He was advised to purchase hypo-allergenic work boots in the future.

Fig. 11

Presentation: allergic contact dermatitis with bullae

Fig. 12

Week one: exudate, pruritis, pain, and edema decreased

The patient did not show up again at the clinic until a few weeks later.
The patient self-reported that he was "completely better" and did not require a follow-up office visit.

*MEDIHONEY™ Absorbent Calcium Alginate Dressing with Active *Leptospermum* Honey, Derma Sciences, Inc., Princeton, New Jersey. Funding for costs associated with this poster provided by Derma Sciences. The information in this poster concerns a use that has not been approved or cleared by the US Food and Drug Administration.