

Autolytic Debridement and Healing of Neonatal and Pediatric Wounds with Active *Leptospermum* Honey

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OBJECTIVE

To establish and demonstrate the promotion of autolytic debridement and wound progression with the use of Active *Leptospermum* Honey (ALH)* in the neonatal and pediatric patient populations.

PURPOSE

To illustrate the excellent patient outcomes with ALH dressings on 3 neonatal and pediatric case studies requiring careful wound debridement and to provide pictorial evidence of the healing process with ALH.

RESULTS

All 3 cases demonstrating autolytic debridement and healing on patients with varying etiologies and of varying ages. In all cases no infection or further slough formation was evident. All wounds demonstrated autolytic debridement with no untoward symptoms and all wounds progressed well in the healing process. The method of action of ALH includes osmotic pull which also helped reduce periwound erythema and edema.

CONCLUSION

In summary, ALH provided safe and effective autolytic debridement for fragile young patients with skin and wound issues of varying etiologies. The treatments were easy to apply and the parents were very pleased with the progress, results, and healing.

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

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References:
1. Paper B. Honey-Based Dressings and Wound Care: An Option for Care in the United States. *J of Wound, Ostomy and Continence Nursing* 2009;36(1):60-66. (review)

CASE 1

Patient is a 23-week by exam, pre-term, low birth weight male of a twin gestation. Patient had a complicated NICU course including respiratory distress, metabolic acidosis, hypotension needing support with dopamine and hydrocortisone therapy, receipt of hyperalimentation, electrolyte imbalance, multiple bacterial sepsis episodes s/p multiple antibiotic regimens, bilateral inguinal hernia repair and multiple wounds requiring care.

Pediatric wound care was consulted on days of life (DOL) 21 when patient developed R arm pressure ulcer, abdominal wound, ulceration of penile shaft, and ischemia of all L toes. The R arm pressure ulcer measured 0.2 cm x 0.1 cm x 0.1 cm with pink wound bed. The abdominal wound measured 1.1 cm x 0.8 cm x 0.2 cm. The penile lesion was a point ulceration on the shaft of the penis. The L distal toes were all involved with dry, necrotic eschar (Figure 1A and 1B). ALH gel was applied to R arm, abdominal wall, penile and L toe lesions. Bordered foam was applied to R arm, abdominal wall, and L toe lesions as a secondary dressing. Xeroform gauze was applied to penile ulcer and daily dressing changes to all initiated.

Three days later on DOL 24, the R arm lesion was completely granulated and was left open to air. The abdominal wound continued to improve with size decrease to 0.1 cm x 0.8 cm x 0.2 cm, pink wound bed with no slough, surrounding erythema or drainage. The penile lesion continued to improve with only a shallow ulceration with pink bed and no surrounding erythema. The L toe lesions were stable with dry ischemia and firm eschar of distal toes with no surrounding erythema. ALH was reapplied to the L toes and covered with bordered foam.

Two days later on DOL 26, patient developed signs of sepsis and was re-started on antibiotics. He also required hydrocortisone for BP support. However, skin lesions continued to improve. The abdominal wound was now measuring 0.5 cm x 0.4 cm x 0.1 cm with pink wound bed and no drainage or periwound erythema. The penile lesion was completely closed. The L toes had firm eschar without erythema or drainage. The wounds were cleansed with saline and gauze. ALH gel was applied to L toe wounds and covered with bordered foam.

Four days later on DOL 30, eschar from the L toe lesions began to fall off and by the following day all but the 1st toe had clear pink underlying skin. Sharp debridement of the 1st toe was performed to remove remaining eschar. ALH was reapplied to toes and covered with bordered foam.

On DOL 31 L toes were left open to air with no additional ALH application. By DOL 36 the toe ischemia had completely healed (Figure 2A and 2B).

This case illustrates the safety and efficacy of ALH in neonatal wound care. ALH was effective both in the debridement of nonviable tissue throughout the body and facilitation of granulation tissue. Most importantly, ALH in combination with good wound management was able to effectively salvage the tips of the toes which may have been amputated otherwise. No side effects from the use of ALH were seen in this premature neonate.

FIGURE 2A and 2B: DOL 36. Two weeks of wound care with application of ALH gel to L toes – eschar removed revealing healthy, pink and intact underlying skin.



CASE 2

Patient is a former 29 week premie with wound care consulted on DOL 26 due to IV infiltrate in the L distal forearm. Initial injury had taken place on DOL 19.

Initial wound size was 1.5 cm x 1.6 cm x 0.2 cm and 100% slough. Wound had erythematous raised borders and mild periwound erythema. Prior to DOL 26 the treatment to that point by neonatology team was application of hydrogel sheet. On DOL 26 ALH calcium alginate was applied and covered with bordered foam dressing. ALH dressing reapplied DOL 27, 29, 31, and 33. On DOL 33 the wound bed was clean and granular without signs of slough and plan of care was changed to application of collagen/silver product.

On DOL 42, 16 days after initiation of wound care, the patient's wound has reduced in size to 0.2 cm x 0.2 cm x 0.1 cm and wound care services were discharged.



CASE 3

Patient is a previously healthy 15 year old female admitted to the hospital with severe right-sided facial vesicular/ulcerative lesions measuring 8.0 x 8.0 cm with depths ranging from 0.1 cm to 0.3 cm. Wound bed was 100% slough or hyperpigmented eschar. Multiple full thickness and partial thickness open wounds scattered over right side of face with edema and erythema. Tests revealed no clear etiology to explain the lesions. Wounds were cleansed with normal saline and LH Hydrogel Colloidal Sheet (HCS) was initiated 11.8.12 and changed daily. Patient was initially started on systemic antibiotics however developed angioedema which was believed to be a drug reaction and antibiotics had to be discontinued and oral steroids were initiated. No side effects were noted with the application of LH. Sharp debridements were performed throughout wound progression as needed.

On 11.12.12 all eschar removed with 50% slough remaining with no residual crusting. Remaining 50% was granulation tissue with healing in progress. On 11.19.12 all wounds were 100% clean and silver/collagen was initiated under LH HCS to further stimulate healing. By 12.4.12 all slough was removed and the wounds nearly completely granulated or epithelized. At this point the patient was lost to further follow up.

