



Leptospermum Honey to Treat Wounds in Spinal Cord Injury Patients

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Disclosure Statement

- ◆ Nothing to disclose; we are in no shape or form sponsored by any third party nor affiliated with any commercial company

Objective

- ◆ Provide information about medical-grade honey
- ◆ Evaluate effectiveness in wound healing for spinal cord injury population on a medical-surgical inpatient unit

Problem Statement

- ◆ Previous interventions were able to aid in the progression of healing of a pressure ulcer, however the progression plateaued
- ◆ A novel approach had to be implemented in order for the healing to progress

Significance

- ◆ Pressure ulcers place a heavy burden on Spinal Cord Injury (SCI) patients and the healthcare system that treats them
- ◆ It is common that SCI patients develop pressure ulcers, which can affect their quality of life
- ◆ The potential of infections when pressure ulcers are not treated promptly is another factor to consider

How Can Pressure Ulcers Affect Quality of Life?

- ◆ Stress
- ◆ Self-conscious about body image
- ◆ Time restrictions to be out of bed affects patients in many ways:
 - ◆ Socializing
 - ◆ Partaking in hobbies
 - ◆ Feeling confined
 - ◆ Work concerns
 - ◆ household chores
 - ◆ tasks unable to be completed
- ◆ Relationship concerns

Stages of Wound Healing

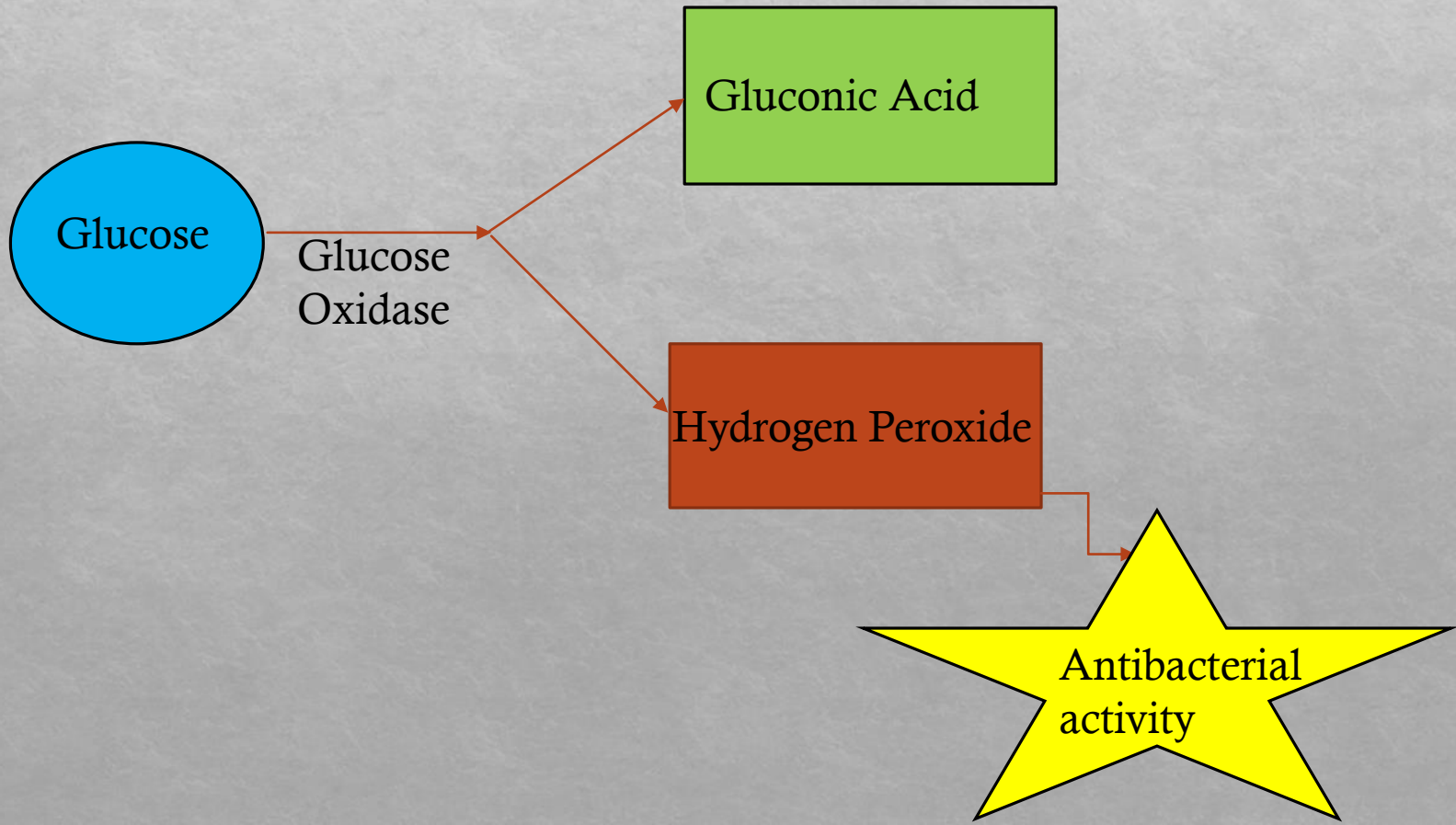
- ◇ In adult humans, optimal wound healing involves the following the events:
 - ◇ (1) Rapid hemostasis
 - ◇ (2) Appropriate inflammation
 - ◇ **(3) Mesenchymal cell differentiation, proliferation, and migration to the wound site**
 - ◇ (4) Suitable angiogenesis
 - ◇ (5) Re-growth of epithelial tissue over the wound surface
 - ◇ (6) Proper synthesis, cross-linking, and alignment of collagen to provide strength to the healing tissue

Benefits of *Leptospermum* Honey

- ◆ Sterile during the manufacturing process
- ◆ Aids in autolytic debridement and the removal of necrotic tissue containing factors that can delay wound healing
- ◆ High Osmolarity
- ◆ Provides a moist wound environment
- ◆ Low pH of 3.5-4.5
- ◆ Non-toxic and natural

Benefits of *Leptospermum* Honey Cont.

- ◇ It is not affected by catalase, which is an enzyme that can degrade hydrogen peroxide into $\text{H}_2\text{O} + \text{O}_2$



How does *Leptospermum* Honey dressing work

- ◆ Upon application, the osmotic potential draws wound fluid that helps liquefy necrotic tissue
- ◆ This proceeds with the autolytic debridement and the removal of necrotic tissue that may contain factors that can delay wound healing like:
 - ◆ Bacterial infection
 - ◆ Necrosis
 - ◆ Pressure
- ◆ Promotes moisture-balanced and low pH environment
 - ◆ Less desiccation
 - ◆ Optimal pH

Leptospermum Honey Dressing



Case Study Subject

- ◇ 77 years old
- ◇ History of tetraplegia, diabetes mellitus type 2, chronic kidney failure
- ◇ Hospitalized for multiple chronic wound management- bilateral ischium and sacrum.

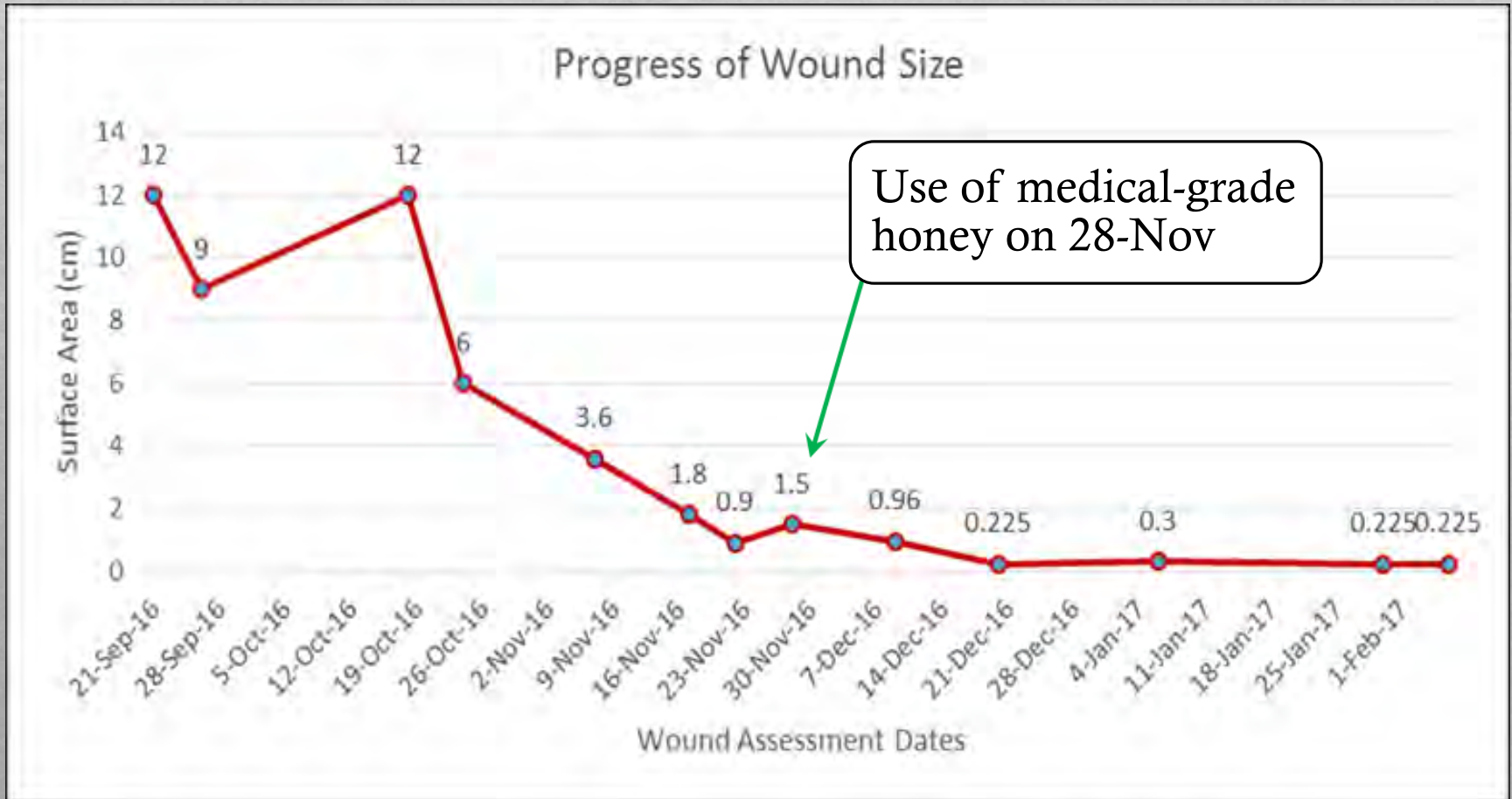
Methods

- ◇ Medical grade honey was implemented on one SCI medical-surgical patient
 - ◇ It was applied onto wound bed every three days or sooner as needed
- ◇ The wound healing progress was compared with previous traditional interventions
- ◇ Pre implementation data was observed over a two month period to create a baseline
- ◇ The post implementation data was observed over a one month period in comparison to baseline

Data Analysis

- ◆ The qualitative and quantitative data demonstrated a progression in wound healing
- ◆ The dimensions of the wound decreased, slough decreased, granulation tissue was present, drainage decreased, no erythema present
- ◆ Using advanced wound healing products, the wound decreased from 3x4x1cm and plateaued at 2x2.5x0.3; the dates recorded were 9/21/16 through 11/28/16
- ◆ When implementing the honey-based product into the wound care regimen, the dimensions decreased from 2x2.5x0.3 cm to 1.5x1.5x0.1 in less than a month; the dates recorded were 11/28/16 through 12/20/16
- ◆ The surface area of the wound decreased by 63.95%

Wound Progress



Additional Progress

- ◆ Quality of Life
 - ◆ Change in demeanor
 - ◆ Increased socialization
 - ◆ Increased interaction with outside environment
- ◆ Continuity of care

Conclusion

- ◆ The use of advanced wound care methods showed progression in the healing of a stage IV pressure ulcer, but the progression plateaued
- ◆ With the implementation of a honey-based product, the progression of wound healing resumed
- ◆ The surface area of the wound decreased by 63.95% in less than a month
- ◆ Improvement in patient's quality of life

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Questions?



Thank You!

