

**COMPARING THE EFFECTIVENESS OF HONEY AND SILVER SULFADIAZINE RELATING TO WOUND CARE**

Dr. Scott Pless, DVM - October 2023.

The effectiveness of raw, unfiltered honey in comparison to silver sulfadiazine is a topic of debate throughout multiple disciplines of Veterinary medicine. Both of these products have been cited to aid in wound restoration within veterinary and human medicine due to their vast healing properties. Raw, unpasteurized honey has an advantage because it is a non-toxic, natural alternative to heavy metal based product such as topical 1% Silver Sulfadiazine cream. It's important to note that in clinical trials, honey dressings have shown to be more affective in facilitating wound healing than topical SS.<sup>1</sup>

Honey is a naturally occurring byproduct that is primarily composed of two monosaccharides called glucose and fructose. Due to the high concentration of simple sugars present, an osmotic effective takes place as the sugars naturally draw out water from damaged tissues. This reduces inflammation of the area and encourages the flow of lymph fluid to aid in wound healing. Another advantage of honey is its anti-microbial properties. The sugar also draws water out of bacterial cells, which can keep the cells from further multiplying. Honey is the oldest known remedy for wound healing and is still utilized in modern Veterinary medicine. Honey provides excellent healing properties due to the fact that it maintains a moist wound condition, has antibacterial properties, while its high viscosity helps to provide a protective barrier to prevent infection. It's important to note that the antimicrobial activity in most honeys is due to the enzymatic production of hydrogen peroxide.<sup>2</sup>

In a clinical study conducted by Muse Alshehabat and Wael Hananeh of Jordan University's Department of Veterinary Clinical Sciences, comparison between the healing effects of moist exposed burn ointment and honey was measured. Some key points from this study is as followed; "Clinically, honey has been shown to decrease wound exudation, enhance immune response at the wound site, stimulate healthy granulation tissue formation, minimize scar tissue formation, and reduce the incidence of wound infections." (Alshehabat, 2020) In their discussion, Alshehabat and Hananeh believe that natural products such as raw honey may promote the healing process and protection of cutaneous wounds without administering any undesired side effects caused by synthetic materials and chemicals.<sup>3</sup>

Silver Sulfadiazine, when applied topically to the skin, poses risks to the wound site such as blistering and peeling of the epidermis, general body swelling, intense itching of burn wounds, skin discoloration, and increased photo-sensitivity. There is only two known side effects to raw, unpasteurized honey when applied to the skin. Stinging pain was reported in less than 5% of patients, and local atopic reactions were noted in very small amounts.<sup>4</sup> When evaluating the effect of honey dressing and silver sulfadiazine dressing on wound healing in burn patients, a study conducted by the MGM Medical College, it was reported that honey dressings decreases the sterilization time, enhances the healing process, and has a better outcome in terms of hypertrophic scars and post-burn contractures when compared to SSD.<sup>5</sup> There was less complications when using honey dressings than using Silver Sulfadiazine.

---

<sup>1</sup> Mandal, Deb Manisha. *Honey: Its Medicinal Property and Antibacterial Activity*. Asian Pacific Journal of Tropical Biomedicine. April 2011.

<sup>2</sup> Yaghoobi, Reza. *Evidence for Clinical Use of Honey in Wound Healing as an Anti-bacterial, Anti-inflammatory Anti-oxidant and Anti-viral Agent: A Review*. Jundishapur J Nat Pharm Prod. August 2013.

<sup>3</sup> Alshehabat, Musa. Hananeh, Wael. *Wound healing in immunocompromised dogs: A Comparison Between the Healing Effects of Moist Exposed Burn Ointment and Honey*. National Library of Medicine. 2020.

<sup>4</sup> Khansa, Ibrahim. *Silver in Wound Care—Friend or Foe?: A Comprehensive Review*. National Library of Medicine. August 2019.

<sup>5</sup> Gupta, Shilpi. Singh, Onkar. *Honey Dressing Versus Silver Sulfadiazine Dressing for Wound Healing in Burn Patients: A Retrospective Study*. Journal of Cutaneous and Aesthetic Surgery. December 2011.

Honey continues to be used in advanced veterinary and medical practices with little adverse effects to the patient. Honey is also used as an alternative for wounds that don't respond well to conventional therapies, such as antibiotic and antiseptic resistance. Honey has been used for wound healing for more than 4,000 years, and repeatedly yields results such as stimulating granulation and re-epithelialization. "On the wound bed, honey also exerts several anti-inflammatory and immune-modulating effects that result in reduced healing time, scarring, edema, exudate, and increased wound tensile strength." (Greiner, DVM 2022)<sup>6</sup>

---

<sup>6</sup> Greiner, Nicole. *The Use of Medical-grade Honey in Veterinary Medicine*. Innovative Veterinary Journal. January 2022.