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Comparison of Honey Treatment and Traditional Ointments in the Treatment of Pressure Ulcer: A Literature Review

As a natural remedy, honey has been used historically as a wound dressing globally. In addition to the low cost, clinical observations are suggesting that honey promotes sloughing of necrotic tissue, acceleration of wound healing, stimulation of cell growth, reduction of other inflammation, and addition healing properties. Studies are also showing antimicrobial actions. In this paper, a literature review of five articles published in reputable journals compares the use of honey-based ointments with traditional ointments in the effectiveness in the treatment of pressure ulcers.

Yapucu Güneş & Eşer (2007) approaches the problem of wound management for pressure ulcers by assisting the renewal of interest in honey derivatives as an ointment. By preserving a moist environment, granulation (tiny blood vessels and new connective tissue) and epithelialization (the growth of epithelial cells) are promoted with minimal scarring. Honey does not cause the tissue damage associated with the use of many other topical antiseptics. Nutrients and lymph are pulled into the wound by osmosis and dressings do not adhere to honey, allowing painless removal without tissue damage. Trials were conducted for the treatment of wounds and ulcers showed significantly better improvement with honey than conventional therapy. Also, a trial using unprocessed honey for the treatment of Fournier's gangrene demonstrated improved results over removing the necrotic skin and applying topic antiseptics. The same superior results were reported for the treatment of split-thickness skin grafts, wound infection after caesarean section or

hysterectomy, burn wounds, and infection.

Yapucu Güneş & Eşer (2007) conducted their study to compare the results of using honey dressing or ethoxy-diaminoacridine with an addition of nitrofurazone dressing on pressure ulcers in the stage II or III of healing.

Using a randomized parallel group evaluation, they collected data over a period of five weeks. The 26 participants in the study were older than 18 years of age and were receiving treatment in a university hospital in Turkey. Measurements were taken using hand tracings and the PUSH tool.

Unprocessed honey was used to verify antibacterial activity levels ranging from 0.25 percent to 25 percent. The results found the group using honey for treatment showed about 4 times the rate of pressure ulcer healing as the control group using the more traditional ointment.

Gupta et al. (2011) also compared honey with dressing treatments, but they used silver sulfadiazine as the comparison in the treatment of burns. While the study by Yapucu Güneş & Eşer (2007) took place in Turkey, Gupta et al. (2011) conducted their research in India. The information presented in their article stated there are around 700,000 to 800,000 patients admitted to hospitals for burns every year. For developing countries, honey is inexpensive and readily available for wound treatment. Records were compared over the past five years from the MGM Medical College and MY Hospital, in Indore, Madhya Pradesh, India. The 108 patients had first- and second-degree burns over less than 50 percent of their bodies. Like the Yapucu Güneş & Eşer (2007) study, pure undiluted honey was used and after the application of the dressing material, the wound was left open.

Measurements of healing were categorized as complete if there was no scar and incomplete if there was a scar or contracture. The average duration for healing time with honey treatments were significantly less than with the silver sulfadiazine (average 18.1 days vs 32.6 days). In addition, 62 percent of the wound swab cultures with the honey treatment became negative within 7 days, while none of the culture did so with the silver sulfadiazine. Of the honey treated patients, 81 percent had a complete recovery while only 45 percent of the control group did so. The discussion of the study stated that the chances of infection increase with the duration of time between the burn and initial treatment; infection will inhibit the healing of the wound and decrease optimum results. Using honey is a much faster initial treatment for patients arriving from rural areas to decrease the chances for infection.

Biglari et al. (2012) conducted their research in Germany and Austria observing the use of Medihoney™ dressings. Data collected for the treatment of 104 wounds from 10 hospitals over 2 years was analyzed. Oncology patients comprised 32 percent of the participants in the study and almost half of the patients were under the age of 18. The authors noted that when honey is processed from the flower manuka, it has increased antibacterial effects; in addition, the therapeutic honey Medihoney™ shows bactericidal activity, decreased the number of planktonic bacteria and other types of bacteria embedded in the structures present on surfaces that regularly come into contact with water. The assessments were positive in 89 percent of the patients, but 1 percent to 3 percent had adverse reactions to the Medihoney™. In the studies by Yapucu Güneş & Eşer (2007) and Gupta

et al. (2011), no adverse reactions were noted; the authors did not use Medihoney™. On the average, wound areas decreased; however, 6.1 percent grew larger and 9.2 percent stagnated. This was also not noted in the previously reviewed studies. The study by Biglari et al. (2012) also mentioned that 43 percent of the patients did not suffer wound pain and 55 percent stated decrease in wound pain after the initial treatment.

Jull, Walker, Parag, Molan & Rodgers (2007) conducted their study in New Zealand and excluded patients from their research with health problems such as diabetes, unlike the trial run by Biglari et al. (2012) which used 400 participants with other serious physical ailments than ulcers. Jull et al. (2007) also kept their attention on ulceration secondary to insufficient blood supply. The study used manuka honey dressings, all from the same batch, in tandem with calcium alginate dressings. The patient was determined to be healed when the wound attained complete epithelialization of the ulcer without a scab present. Time to healing was slightly less for honey-treated patients than traditionally-treated patients ((63.5 vs 65.3 days). Pain was reported in 25 percent of the honey-treated patient, thought to be from the acidity of the honey. This event was not reported in the other studies. The results were that 55.6 percent the group with honey-treated care completely recovered in comparison with 49.7 percent of the control group. These results were less dramatic than the studies conducted by Biglari et al. (2012), Gupta et al. (2011), and Yapucu Güneş & Eşer (2007) and the authors concluded that the difference in results was not clinically relevant. They noted that out of 18 recent studies with honey-treated care, 13 reported positive results. The

authors felt this may be due to bias created by publications, or perhaps the fact that the treatments focused on burns or other acute wounds. For this review, it is noted that Yapucu Güneş & Eşer (2007) used ulcers for their research focus.

Finally, Molan (2006) also mentioned that advertisements for honey dressings do not emphasize that positive trials used small, poor-quality populations to achieve their results. He notes that multiple trials comparing honey dressing favorably to more traditional treatments and the results were demonstrated in animal testing. Molan also states that research has been conducted as far back as the 1950s. He acknowledges that none of the studies he reviewed were double blind experiments and therefore are not considered evidence of the highest level. Molan concludes that there is a large body of evidence supporting the use of honey dressings for the treatment of various types of wounds.

The limitations in the studies reviewed indicate the need for additional research in each case. The study by Yapucu Güneş & Eşer (2007) on pressure ulcers suggested additional investigation into the effect on stage IV ulcers. The antimicrobial effects of the honey may vary and comparisons with other types of ointments should be undertaken. Since a large number of the patients in the Biglari et al. (2012) studies had serious illnesses, the physicians often combined the honey treatment with topical antiseptics and systemic antibiotics; for this reason, the researchers would like to see research on honey treatment of oncology patients with wounds that do not require these additions.

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