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Role of Honey in the Wound Management

Dr Manoj Kumar, Dr Krishna Gopal, Dr Mukesh Kumar, Dr Chandra Jyoti

Abstract: ***Now a days management of different types of wound healing is complicated. Honey has been used in wound management for its wound healing properties since centuries and used for successfully heal for Diabetic ulcer, Pressure ulcer and Traumatic ulcer.***

Keywords: honey, wound, ulcer, healing, infection

1. Introduction

The widespread existence of unhealed wounds, ulcers, and burns has a great impact on public health and economy. Many interventions, including new medications and technologies, are being used to help achieve significant wound healing and to eliminate infections. Therefore, to find an intervention that has both therapeutic effect on the healing process and the ability to kill microbes is of great value. Honey is a natural product that has been recently introduced in modern medical practice. Honey's antibacterial properties and its effects on wound healing have been thoroughly investigated. Laboratory studies and clinical trials have shown that honey is an effective broad-spectrum antibacterial agent. This paper reviews data that support the effectiveness of natural honey in wound healing and its ability to sterilize infected wounds. Studies on the therapeutic effects of honey collected in different geographical areas on skin wounds, skin and gastric ulcers, and burns are reviewed and mechanisms of action are discussed. (Ulcers and burns are included as an example of challenging wounds.) The data show that the wound healing properties of honey include stimulation of tissue growth, enhanced epithelialization, and minimized scar formation. These effects are ascribed to honey's acidity, hydrogen peroxide content, osmotic effect, nutritional and antioxidant contents, stimulation of immunity, and to unidentified compounds. Prostaglandins and nitric oxide play a major role in inflammation, microbial killing, and the healing process. Honey was found to lower prostaglandin levels and elevate nitric oxide end products. These properties might help to explain some biological and therapeutic properties of honey, particularly as an antibacterial agent or wound healer. The data presented here demonstrate that honeys from different geographical areas have considerable therapeutic effects on chronic wounds, ulcers, and burns. The results encourage the use of honey in clinical practice as a natural and safe wound healer.
KEYWORDS: honey, wound, ulcer, healing, infection,

Healing Properties of Honey
Honey has long been documented as having healing properties. Honey and sugar paste were associated with scarless healing in cavity wounds. It has been reported that rabbit wounds treated with a topical application of honey showed less edema, fewer polymorphonuclear and mononuclear cell infiltrations, less necrosis, better wound contraction, improved epithelialization, and lower glycosaminoglycan and proteoglycan concentrations. Furthermore, honey causes significantly greater wound contraction than controls, and it promotes the formation of granulation tissue and epithelialization of wounds. Honey stimulates tissue growth, synthesis of collagen, and development of new blood vessels in the bed of wounds.

Honey and Wounds
Generally, wound healing can be affected by endogenous (pathophysiology) and exogenous (microorganisms) factors. The risk of wound infection increases as local conditions favor bacterial invasion and growth. Therefore, microbial colonization of both acute and chronic wounds is inevitable. Many species of bacteria have been recovered from wounds, but Staphylococcus aureus is the most frequently isolated from wound pathogens [45]. In addition, Pseudomonas aeruginosa is an important pathogen in chronic wounds and burns; its presence has been demonstrated in numerous studies and has been found in onethird of chronic leg ulcer. Infection with S. aureus and pseudomonads retards ulcer healing rates and, with pseudomonads and B-hemolytic streptococcus, reduces the success of skin grafts used for leg ulcers. The widespread development of antibiotic-resistant bacteria is a challenging problem. Therefore, current interest is focused on an alternative to antibiotics and conventional therapies, such as honey, antimicrobial moisture-retentive dressings, essential oils and cationic peptides, topical enzymes, biosurgical therapies, and vacuum therapies. In addition, unregulated inflammation caused by both microorganisms and underlying abnormal pathophysiological conditions is a major factor associated with the process of healing in chronic wounds [52]. Many research works reported the use of honey for treatment of both wounds and infections.

Honey with proven antibacterial activity has the potential to be an effective treatment option for wounds infected or at risk of infection with various human pathogens. The medical literature on treating wounds with honey has been reviewed. As a dressing on wounds, honey provides a moist healing environment, rapidly clears infection, deodorizes, and reduces inflammation, edema, and exudation. It increases the rate of healing by stimulation of angiogenesis, granulation, and epithelialization.

General Effects of Honey on Wound Healing

1) Causes greater wound contraction
2) Promotes the formation of granulation tissue
3) Promotes epithelialization of wounds
4) Stimulates tissue growth, synthesis of collagen
5) Stimulates development of new blood vessels in the bed of wounds
6) Reduces edema
7) Reduces inflammation
8) Deodorizes wounds
9) Promotes moist wound healing

10) Facilitates debridement
11) Reduces pain

2. Material and Methods

Study was conducted for admitted patients with different kinds of wounds like Diabetic ulcer, Pressure ulcer, Traumatic ulcer from April 2018 to March 2019

Aims
Honey dressing to reduce duration of hospital staying, promotes wound healing

Objectives
1) To assess the effects of honey dressing for acute and chronic wounds
2) Duration of hospital staying
3) Incidence of infection
4) Cost effective
5) Quality of life

Total no. of patients -60

Inclusions Criteria:
- Diabetic ulcer
- Pressure ulcer
- Traumatic ulcer

Exclusion Criteria
- Lepromatous ulcer
- Syphilitic ulcer
- Skin malignancies

Methods
Good quality of honey specifically for wound management. some examples of medical grade honey with antibacterial activity for used in wound management are Apiban, Medihoney. Heating of honey above 37 degree celcius should be avoided because its contents destroyed by exposure to both heat and light. Honey dressing should be based on the wound type. Frequency of dressing change depends upon the amount of exudates to prevent contamination outer dressing must be changed whenever it is moist with exudates. Honey soaked gauze placed over the wound applying the 1 to 4 times daily .Require dosage of honey on the wound depends on the amount of exudates, Deep wound requires large amount of honey to produce antibacterial activity. honey can be applied on the wound for better outcome as well as to reduce the risk of microbial contamination .Maximum coverage of inflamed wound areas by honey with highest contact is recommended .A mixture of 1 volume of honey with 3 volume of saline can be applied to allow better diffusion of honey until debridement is achieved.

3. Results

The Study of total 60 Patients
Honey has anti-bacterial, anti-inflammatory and anti-oxidant properties. It can be used as wound dressing to promote rapid and improved healing. Honey dressing leads to improved wound healing in acute cases, pain relief and decreased inflammatory response. Honey soaked gauzes showed a good epithelisation.

4. Conclusions

Sufficient amount of honey dressing in wound management of acute and chronic wund.

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9) Promotes moist wound healing
10) Facilitates debridement
11) Reduces pain
12) Cost effectiveness
13) Improve the quality of life

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