



# Using Medicated Honey in Chronic Wound Healing for Diabetic Foot Patient: Case Study and Literature Review



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## Abstract

**Background:** Chronic Wound is the type of Wound which couldn't heal in 3 months' duration. Chronic Wound seems stay in inflammatory stage for long time [1]. Diabetic foot lesions are responsible for more hospitalizations than any other complication of diabetes [2]. Diabetic foot infections are diagnosed clinically based on the presence of at least two classic findings of inflammation or purulence [3].

**Materials and methods:** In this case I started dressing by ordinary methods for dressing then I shifted to medicated honey gauzes day by day.

**Results:** The results were excellent and there was generous improvement and rapid healing of the wound within one month.

**Conclusion:** using medicated honey in infected diabetic foot wounds is very effective, rapid and useful in chronic wound healing.

**Keywords:** Honey; Diabetic; Foot; Dressing; Chronic; Wound

## Introduction

Wound healing is replacement of dead tissues by living one; skin is consisted of epidermis which is superficial layer of skin, Dermis and subcutaneous tissue. In undamaged Skin Epidermis & Dermis makes a barrier to outer environment, when the barrier broken then biochemical process set into motion to repair that [1]. Diabetic foot wound is considered one of the major complications of diabetes mellitus, and it is responsible for hospitalization other than any complications of diabetes. Also, it is a burden on the economic level for the patient and also for the governments. So, all researches about management of diabetic foot concentrate on this issue and to lower hospitalization rate of diabetic foot patients and to hasten recovery of patients. In this case study, I focused on usage of medicated honey in treatment of diabetic foot wounds. It is known that honey has antioxidant, anti-bacterial and anti-inflammatory properties. It can be used as a wound dressing to promote rapid and improved healing [4]. Honey has also been used to lessen foul odors emanating from wounds which cause a social barrier for patients and may lead to isolation [4].

## Case Report

A 54 years old male patient was come in outpatient clinic for a consultation post diabetic foot abscess drainage and débridement

in January 2021; the chief complaint of him was a big wound at plantar aspect of the left foot with edema at dorsum of the foot. the size of the wound was 12 cm length and 6 cm width and 3 cm depth. His blood glucose level is controlled, and all vital parameters were good.

### Local wound examination:

There was exudate, edema and tenderness, the x-ray of the foot was normal. No deformity or fracture and the duplex study of lower limb was normal.

### Material and methods:

I started dressing for him by using verities of wound dressing such as washing with saline and local ointments as B-sitosterol and silver sulfadiazine for about 2 months, the dressing was day by day. But with low healing power then shifted to medicated honey (Manuka) gauze dressing day by day, it gives a marvelous result and the healing is hastened, the wound was completely healed within 3 weeks. the Manuka honey contain three compounds: Leptosperin, Docosaheptaenoic acid (DHA) and Methylglyoxal (MGO). Manuka honey comes straight from the nectar of the New Zealand Manuka bush (*Leptospermum scoparium*).

**Method of dressing:**

- a. Clean the wound with saline and gauze.
- b. Debridement of dead and unhealthy tissues.
- c. Wash again with saline and dry the wound and the area around.
- d. Manuca gauze dressing is put in the wound and fill all the wound with manuca gauze.
- e. We put sterile gauze over the manuca gauze and wrap with sterile cotton and bandage.

- f. This is done day by day till complete wound closure.
- g. The patient was wearing a suitable shoe over the wound for purpose of offloading.

**Results**

I noticed after trial of using medicated honey (Manuca) that the results were marvelous and rapid recovery of the wound in a little time, wound shrinkage, the bed of the wound is filled by healthy pink granulation tissues in a rapid time in comparison to other types of dressing. The time of using ordinary methods of dressing was 70 days and the time of using medicated honey dressing was less than 1 month (Figures1-7).



**Figure 1:** Day 1 (12 January 2021).



**Figure 2:** 3 weeks later, beginning of granulation tissues growth at bottom of the wound.



**Figure 3:** 6 weeks later on, more granulation tissue growth).



**Figure 4:** (9 weeks later on with beginning use of medicated honey dressing).



**Figure 5:** 12 weeks later the granulation tissue full fill all the wound bed.



**Figure 6:** (13 weeks more shrinkage of the wound and improvement with medicated honey dressing).



**Figure 7:** (14 weeks complete wound closure).

## Discussion

In present case study we noticed that usage of medicated honey dressing Hasten the wound closure and improve growth of granulation tissue. Medicated honey can be used in different types of chronic and infected wounds, and this is very important on the health and economic levels for the community and the patient as well. According to (Alam f., et al) Honey has potent antibacterial activity and is effective in preventing and clearing wound infections [4]. Also, Honey has several natural substances that contribute to its antimicrobial activity including an osmotic effect, a naturally low pH, and the production of hydrogen peroxide [5]. In a poor-quality randomized controlled trial, honey dressing compared with saline-soaked dressing was found to accelerate

healing in Stages I and II pressure ulcers. 44 In another, poor-quality trial, honey was found to accelerate healing in Stage II or III pressure ulcers [6].

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