ABSTRACT

TITLE: **A STUDY TO COMPARE THE EFFECTS OF HONEY AND SALINE DRESSING IN WOUND HEALING OF CHRONIC FOOT ULCERS**

AIMS AND OBJECTIVES:

To study the efficacy of application of honey dressing in the management of chronic foot ulcers and comparison of the results over the conventional method of saline dressing.

MATERIALS AND METHODS

Sterilised Honey

Normal Saline

STUDY POPULATION:

This is a prospective study conducted on 80 individuals (40 control group, 40 test group) who are admitted in GOVERMENT RAJAJI HOSPITAL, MADURAI during the study period of August 2013 to August 2014 2014.Subjects of this study include all individuals with chronic non healing non malignant ulcers. Randomization is done (by

allotting random numbers one to hundred to all the patients coming with complaints of chronic non healing non malignant ulcers) followed by alternate subjects were treated with treatment A (saline dressing) and the others will be treated with treatment B (honey dressing).

Inclusion criteria:

a. Patients aged more than 20 years with chronic foot ulcer.

b. Ulcers of Wagener's Grade II-IV.

Exclusion criteria:.

1. Malignant ulcers
2. Ulcers of Wagner's Grade V.
3. X-ray showing osteomyelitis.
4. Doppler showing gross atherosclerotic arterial changes and venous abnormalities
   like varicosities.
5. Malnutrition, uncontrolled diabetes.
6. Other clinically significant medical conditions that would impair wound healing
   including renal, hepatic, hematological, neurological, and immunological

diseases.

7. Patients receiving corticosteroids, immunosuppressive agents, radiation, or
   chemotherapy within one month prior to entry into the study were also excluded.

DATA COLLECTION:

The selected patients have to undergo screening for a period of one to two weeks, to stabilize the wound and institute appropriate medical and surgical line of treatment like diabetic control, control of infection by initiating appropriate antibiotic based on culture sensitivity report, surgical debridement, correction of anemia and correction of other medical illness.

After the initial screening period the eligible patients who required bed side debridement to be divided randomly into test group and control groups.

1. Test group: Receive dressing with gauze embedded with thin layer of natural honey bed side surgical debridement when ever required for wounds / ulcers which had slough in the floor and till granulation tissue appeared.

2. Control group: Receive bed side surgical debridement with conventional saline dressing.

The test medication to be applied to test group once daily, only superficial slough was removed using bed side surgical debridement when ever required.

Wounds to be treated once daily until complete debridement or up to seven weeks. The amount of nonviable tissue, degree of wound granulation, and overall wound response to be evaluated weekly using a visual score.

The visual scores are as follows

a. The score for the percentage of wound covered by slough and nonviable (necrotic) tissue are

1. = 76-100% wound covered with nonviable tissue.

2. = 51-75% wound covered with nonviable tissue.

3. = 26-50% wound covered with nonviable tissue.

4. = 11-25% wound covered with nonviable tissue.

5. = 0-10% wound covered with nonviable tissue.

6. = No necrotic tissue

b. The score for the percentage of wound covered by granulation tissue are

1. = No granulation present

2. = < 25% of wound covered by granulation tissue

3. = 25-74% of wound covered by granulation tissue

4. = 75-100% of wound covered by granulation tissue

The reduction of wound size and area measured in cm2

DESIGN OF STUDY:

prospective comparison study

PERIOD OF STUDY:

August 2013 to August 2014

SELECTION OF STUDY SUBJECTS:

All patients belonging to age more than 20 years in both sexes admitted in Govt Rajaji Hospital with chronic non malignant foot ulcers.

DATA COLLECTION:

Data regarding history, clinical examination, investigation, surgery, time, cost and outcome.

RESULTS

The number of patients with no necrotic tissue is significantly higher in Test group at 3rd week follow up (P< 0.001), at 4th week (P <0.001), at 5th week (P <0.001), at 6th week (P < 0.001) and at the 7th week (P<0.01) when compared to control group. There is minimal loss of viable tissue in the test group compared to that of control group this is because the number of bedside surgical debridements required is less and done superficially to remove dead tissue only.

The number of patients with 75-100% wound filled by granulation tissue is significantly higher in Test group at 3rd week follow up (P<0.001), at 4th week (P <0.001), at 5th week (P <0.001), at 6th week (P <0.001) and at the 7th week (P< 0.05) when compared to control group.

The number of patients with no wound surface (nil) is significantly higher in Test group at 3rd week follow up (P<0.05), at 4th week (P <0.05), at 5 week (P <0.05), at 6th week (P < 0.001) at the 7th week (P < 0.001) when compared to control group.

In addition to the above observation test group has experienced less pain and reduced Malodor from the ulcer site compared to that of control group.

The duration of hospital stay was less in test group compared to control group. The patients treated with Honey dressings had faster reduction of slough / necrotic tissue and increased granulation tissue.

This study demonstrated that Honey dressings along with bed side surgical debridement had cumulative effect in reduction of slough, increase granulation tissue and faster wound bed preparation.

The test group patients had increased growth of the granulation tissue along with epithelization which is generally correlated with the development of a granulating wound bed. All this are done with visual score.Hence it was not possible to determine if the granulation tissue production was actually increased after treatment or if just more granulation became visible after debriding the ulcer But patients in test group produced better results than the control group.

The test group patients also experienced less pain than the control group because the need for the bed side surgical debridement is less than the control group

The test group patients under went skin grafting, secondary suturing and flap as early as 3rd week than control group because of faster wound bed preparation. The wound also healed faster this is due to increased epithelization

CONCLUSION

Honey dressing proved to be highly effective in reduction of slough, promoting granulation tissue formation and reepitheilization Honey dressing proved to be significantly effective in wound bed preparation in comparison with conventional treatment with normal saline.

Our study concluded that Honey is a effective topical applicant in faster reduction of slough, regeneration of granulation tissue and Reepitheilization in chronic foot ulcer.

KEYWORDS: Honey Dressing, Chronic ulcer, Diabetic foot, Normal saline, chronic, wagner's classification, Wound dressings, wound Healing.