Original Research Paper

Volume-8 | Issue-12 | December-2018 | PRINT ISSN No 2249-555X

Nursing

A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF HONEY APPLICATIONVERSUS BETADLINE DRESSING ON THE WOUND HEALING AMONG PATIENTS WITH ULCERS

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ABSTRACT Wounds are their management fundamental in the practice of surgery. A wound can result from either an external or an internal insult, such as mechanical insult, thermal insults, or radiation therapy. Chronic wounds on the other hand, are largely caused by an internal insult in the form of circulatory compromise. Inadequate circulation robs tissue of necessary nutrients and potentiates to produce the inflammatory cytokines, leading to tissues necrosis. In my present work by using the quantitative research approach by using quasi experimental pre and post test research design was used to assess the effectiveness of honey application versus betadine dressing in wound healing of ulcers. The collected data was organized, tabulated, analyzed and interpreted by using descriptive and inferential statistics based on the objectives of the study and Effectiveness of intervention will be analyzed by using paired 't' test and independent 't' test. Among Group-I on 7thday of intervention 11 (27%) tissue health and 19(63%) patient had wound regeneration, and 3(10%) having wound degeneration on 7th day of intervention. Among Group-II on 7th day of intervention 9 (30%) tissue health and 16(53%) patient had wound regeneration, and 5(17%) had wound degeneration on 7th day of intervention. The obtained t value of 7.83, was very highly significant at P<.005 level. It indicates that the honey application was more effective than the beta dine dressing on wound healing on 7th day of intervention.

KEYWORDS : Honey application, betadline dressing and its analysis

INTRODUCTION

Wounds are their management fundamental in the practice of surgery. A wound can result from either an external or an internal insult, such as mechanical insult, thermal insults, or radiation therapy. Chronic wounds on the other hand, are largely caused by an internal insult in the form of circulatory compromise [1]. Inadequate circulation robs tissue of necessary nutrients and potentiates to produce the inflammatory cytokines, leading to tissues necrosis [2].

The process of wound healing is classically divided into 4 stages Hemostasis [seconds to minute], inflammation [3-5 days], proliferation [4-14 days], and remodeling [8days to 1 year]. Various factors affecting the wound healing are host related factors or endogenous factors. Exogenous factors include duration of wounds, glove punctures, emergency procedures, air born contamination, wound contamination, tissue perfusion, and microbial causing infection [3]. Tissue level factors or local level factors like poor blood supply, inadequate oxygenation undue tension in suturing, tissue necrosis and local infection have profoundly deliterious effect on all aspect of wound healing [4].

A multitude of risk factors influences the development of wound infectious site and awareness of these will help to promote effective strategies. One such preventive strategy is wound dressing [5,6]. A wound dressing is a medical tool that is used to cover the injury . It protects a wound from debris that could carry bacteria and cause infection and also from mechanical damage. Dressings are important to maintain sterility and absorb blood and serum. Moisture improves the rate of epithilization [7-9].

The goal of wound care is to first remove the offending in sult, then to provide the best possible the best possible environment to facilitate wound healing. Controlling the bacterial load of a wound is one of the most important aspects in ensuring an optimal healing environment [10-12].

Honey a complex mixture containing mainly glucose and fructose was used by ancient Egyptian [3]. Hippocrates, father of modern medicine, also recommended the use of honey as an ointment [4]. Recent years have seen a revival of interest in the use of sugar, sucrose as a dressing material. Honey has an excellent “trace record” over 4000 years of usage as a wound dressing. In recent times it has been “rediscovered” with various report of clinical studies, care reports and randomized controlled trials showing it takes alongside modern dressing intervals in its effectiveness in managing wounds and has a potent antibacterial activity and it also has anti-inflammatory activities and a stimulatory effect on granulation and epithelialization [13].

OBJECTIVES OF STUDY

To assess the chronic ulcer by using wound assessment scale.

- To evaluate the effectiveness of honey application on wound healing among patients with ulcers
- To evaluate the effectiveness of betadine dressing on wound healing among patients with ulcers
- To compare the effectiveness of honey application versus betadine dressings on wound healing among patients with ulcer.
- To associate the effectiveness of honey versus betadine dressing on wound healing among patients with ulcers with selected demographic variables

HYPOTHESIS

- **H0:** There will not be statistically significant difference on wound healing before and after the honey applications versus beta dine dressing among patients with ulcers.
- **H_1:** There will be statistically significant difference on wound healing before and after the honey applications versus beta dine dressing among patients with ulcers.
- **H2:** There will be significant association between the honey applications versus beta dine dressing among patients with ulcers.

DETAILED RESEARCH PLAN

Research Approach: Quantitative Approach.

Research Design:.Quasi experimental pre and posttest research design.

Research Setting: The setting of the study was conducted in Narayana Medical College Hospital, Nellore

Sampling Technique: Non probability convenience sampling techniques was adopted for selection of the subjects.

Sample Size: The sample size of the study is 60, Group – 1(30), Group -2 (30) .

Data collection procedure: Wound ulcers was assessed by using the **Bates Jensen wound assessment scale** and selected a 30 patients with wound ulcer for application of honey , Another group for betadine dressing to 30 patients. For two groups the dressing was done every day once for **7 days**. After 7th day Post test was conducted by using the same scale to assess the wound ulcer.

Dressing method is as follows:

- Preparation of the patient and articles
- Perform aseptic hand wash
- With sterile gloves, clean the wound with sterile wet cotton swabs.
- Apply honey or betadiene soaked gauze over the wound.
- Apply dressing pads over that and cover with bandages or adhesive plaster.

- **Description of the tool**

The investigator developed Bates- Jensen wound assessment tool to assess the effectiveness of Honey application and betadine dressing on wound ulcers patients in Narayana medical college hospital at Nellore.

The tool for data collection consist of;

a) It includes Demographic variables.

b) It includes Bates-jensen wound assessment tool .

TABLE 1 TOOL FOR WOUND ASSESSMENT

ITEM	ASSESSMENT
Size	1. Length x width <4 sq cm , 2. Length x width 4--<16 sq cm , 3. Length x width 16.1--<36 sq cm , 4. Length x width 36.1--<80 sq cm , 5.Length x width >80 sqcm
Depth	1 = N 1. Non-blanchable erythema on intact skin , 2. Partial thickness skin loss involving epidermis &/or dermis, 3. Full thickness skin loss involving damage or necrosis of subcutaneous tissue; may extend down to but not through underlying fascia; &/or mixed partial & full thickness &/or tissue layers obscured by granulation tissue obscured by necrosis , 4. Full thickness skin loss with extensive 5. Destruction, tissue necrosis or damage to muscle, bone or supporting structures
Edges	1.Indistinct, diffuse, none clearly visible, 2. Distinct, outline clearly visible, attached, even with wound base , 3 = Well-defined, not attached to wound base, 4. Well-defined, not attached to base, rolled under, thickened, 5. Well-defined, fibrotic, scarred or hyperkeratotic
Under-mining	1.None present, 2. Undermining < 2 cm in any area, 3. Undermining 2-4 cm involving < 50% wound margins, 4. Undermining 2-4 cm involving > 50% wound margins, 5. Undermining > 4 cm or Tunneling in any area
Necrotic Tissue Type	1. None visible, 2. White/grey non-viable tissue &/or non-adherent yellow slough, 3. Loosely adherent yellow slough, 4. Adherent, soft, black eschar, 5. Firmly adherent, hard, black eschar
Necrotic Tissue Amount	1. None visible, 2. < 25% of wound bed covered, 3. 25% to 50% of wound covered, 4. > 50% and < 75% of wound covered, 5. 75% to 100% of wound covered
Exudate Type	1.None, 2. Bloody, 3. Serosanguineous: thin, watery, pale red/pink, 4. Serous: thin, watery, clear 5. Purulent: thin or thick, opaque, tan/yellow, with or without odor
Exudate Amount	1. None, dry wound, 2. Scant, wound moist but no observable exudate , 3. Small, 4. Moderate 5. Large
Skin Color sarounding Wound	1.Pink or normal for ethnic group, 2. Bright red &/or blanches to touch, 3. White or grey pallor or hypopigmented, 4. Dark red or purple &/or non-blanchable, 5. Black or hyperpigmented
Peripheral Tissue Edema	1. No swelling or edema, 2. Non-pitting edema extends <4 cm around wound , 3. Non-pitting edema extends >4 cm around wound , 4. Pitting edema extends < 4 cm around wound , 5. Crepitus and/or pitting edema extends >4 cm around wound
Peripheral Tissue Induration	1. None present, 2. Induration, < 2 cm around wound , 3. Induration 2-4 cm extending < 50% around wound , 4. Induration 2-4 cm extending >50% around wound , 5. Induration > 4 cm in any area around wound
Granu-lation Tissue	1.Skin intact or partial thickness wound , 2.Bright, beefy red; 75% to 100% of wound filled &/or tissue overgrowth, 3.Bright, beefy red; < 75% &> 25% of wound filled, 4. Pink, &/or dull, dusky red &/or fills <25% of wound ,5. No granulation tissue present
Epithe-lializa-tion	1.100% wound covered, surface intact, 2. 75% to <100% wound covered &/or epithelial tissue extends >0.5cm into wound bed , 3. 50% to <75% wound covered &/or epithelial tissue extends to <0.5cm into wound bed , 4. 25% to < 50% wound covered , 5. < 25% wound covered

WOUND STATUS CONTINUUM

1 5 10 **13** 15 20 25 30 35 40 45 50 55 **60**

Tissue Wound
Wound Health
Degeneration Regeneration

Plot the total score on the Wound Status Continuum by putting an **"X"** on the line and the date beneath the line. Plot multiple scores with their dates to see-at-a-glance regeneration or degeneration of the wound.

RESULTS AND DISCUSSION

Description of demographic variables of among patient with wound ulters

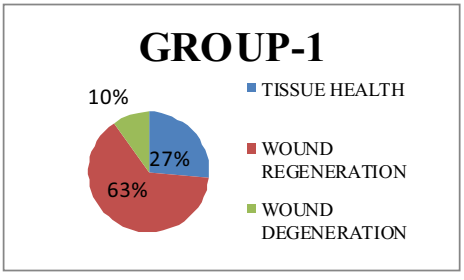
Group: 1

- 15(50%) of wound healing ulcers among patients age between 51-60 years
- 21(70%) of wound healing ulcers among patients were males
- 10(33.33%) ofwound healing ulcers among patients were annual income ,
- 15(50%) of wound healing ulcers among patients upper primary school age children were Hindus
- 15(50%) of wound healing ulcers among patients occupation were cooli
- 15(50%) of wound healing ulcers among patients were source of information from family member.
- 13(43.33%) of wound healing ulcers among patients were having diabetes

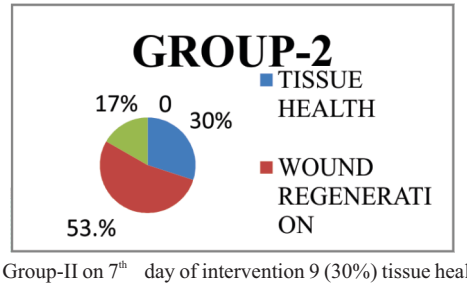
Group: II

- 11(36.66%) of wound healing ulcers among patients age between 51-60 years
- 22(73%) of wound healing ulcers among patients were males
- 7(23.33%) of wound healing ulcers among patients were annual income ,
- 16(53.33%) of wound healing ulcers among patients upper primary school age children were Hindus
- 12(40%) of wound healing ulcers among patients occupation were cooli
- 15(50%) of wound healing ulcers among patients were source of information from family friends
- 13(43.33%) of wound healing ulcers among patients were having diabetus

Effectiveness of honey application versus betadine dressing on wound healing among patients with ulcers on 7thday after intervention among group-I and group-II.



Among Group-I on 7th day of intervention 11 (27%) tissue health and 19(63%) patient had wound regeneration, and 3(10%) having wound degeneration on 7th day of intervention.



Among Group-II on 7th day of intervention 9 (30%) tissue health and 16(53%) patient had wound regeneration, and 5(17%) had wound degeneration on 7th day of intervention.

TABLE 2 COMPARISON OF MEAN AND STANDARD DEVIATION OF HONEY APPLICATION VERSUS BETADIENE DRESSINGON WOUND HEALING ON 7RD DAY INTERVENTION

Groups	Mean	Standard deviation	Independent 't' Value
Group –I	42.72	5.28	7.83 Tab=2.57*** S***
Group-II	30.03	4.66	**P<.005**

Table 2 represents the comparison of mean and standard deviation of honey application and butadiene dressing on wound healing on 7th day of intervention. The obtained' value of 7.83, was highly significant at P<.005 level. It indicates that the honey application was more effective than the butadiene dressing on wound healing on 7th day of intervention.

CONCLUSION

The conclusion drawn from this study was that there was a significant difference between the honey and betadine dressing on wound ulcer. Among Group-I on 7th day of intervention 11 (27%) tissue health and 19(63%) patient had wound regeneration, and 3(10%) having wound degeneration on 7th day of intervention. Among Group-II on 7th day of intervention 9 (30%) tissue health and 16(53%) patient had wound regeneration, and 5(17%) had wound degeneration on 7th day of intervention. The obtained "t" value of 7.83, was very highly significant at P<.005 level. It indicates that the honey application was more effective than the beta dine dressing on wound healing on 7th day of intervention.

NURSING IMPLICATIONS

The findings of the study showed that there is a significant relationship between the butadiene dressing and honey application on wound healing, so wound dressing on wound ulcers with honey application should be implemented in our nursing care.

Nursing education

Honey application usage for wound healing should become as a practice in the hospital setup. The student nurses should have the adequate knowledge on the importance of honey application on wound healing. The health care personnel should give more attention on training the students to practice this intervention.

Nursing practice

Nurses should extent the knowledge on bates scale assessment on wound ulcers and healing process.

Nursing Administration

In administration level honey application should be implemented in our nursing practice. They should take initiative to conduct continue nursing education to update the current information and to improve the knowledge of health care personnel.

Nursing Research

Nursing care is a task oriented and fragmented care, but it demands to look after the comprehensive care of the client in a scientific way.

LIMITATIONS

1. The study was only confined to the wound ulcer patients.
2. The observation were limited to certain time period
3. The observation made by the investigator only

RECOMMENDATIONS

On the basis of present study, the following suggestions are formulated for future study. A similar study can be conducted for large number of sample

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