Original Article

A Study To Observe The Effectiveness Of Normal Saline And Honey Gauze Dressing In The Preparation For Skin Grafting

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DOI:10.47750/pnr.2022.13.S08.538

Abstract

Background: The nature of dressing is very essential to manage to graft. The selected dressing should be inert, physiological, and cost-effective. Hence, the search for appropriate and effective dressing is continuing.

Objectives: The present study was undertaken to compare the effectiveness of normal saline and honey gauze dressing in the management of wound healing.

Materials and methods: The present study was an experimental study. Thirty patients with wounds with small patches of slough and/ or pale granulation tissue not ready for grafting and not requiring surgical debridement were included in the study. The area to be dressed was measured. Sterile gauzes soaked in a commercially available tube packed honey and normal saline available as intravenous drips were applied over the wounds. Both wet dressings were covered with sterile cotton and crepe bandage. The dressing was changed on daily basis and the wound was examined.

Results: There were 12 female participants and 18 male participants in the study. The age range was 25 years to 50 years. In the normal saline group, 53.3 percent of wounds are burn wounds and 46.6 percent of wounds are post-infective wounds. In the honey group, 40 percent of the participants are burn wounds and 60 percent of the wounds are post-infective wounds.

Conclusion: The study results suggest that normal saline is better dressing material when compared to honey. Further detailed studies are required in this area to suggest normal saline as the natural and cost-effective dressing material.

Keywords: Honey, Normal Saline, Wound healing.

INTRODUCTION:

In plastic surgery procedures, wound management has pivot importance. Some wounds cannot be closed primarily. Such wounds can be managed by primary grafting. [1] However, the skin graft may fail if the recipient site is not well prepared. The nature of dressing is very essential to manage the grafting.[2] The selected dressing should be inert, physiological, and cost-effective. Hence, the search for an appropriate and effective dressing is continuing.[3] Some of the naturally available products were added to the dressing materials that include banana leaves, papaya, etc.[4] Further, the modern dressing is costly and not available locally and its effectiveness over the traditional gauze dressing is yet to be proven.[5] Normal saline-soaked dressing is easily available and cost-effective and has fewer side effects. It acts as an osmotic dressing.[6] Further, the healing rate using the saline dressing is faster.[7] On the other hand, honey is part and parcel of traditional medicine. It has been used in the management of wounds for a long time.[8] The present study was undertaken to compare the effectiveness of normal saline and honey gauze dressing in the management of wound healing.

MATERIALS AND METHODS:

Study Design: The present study was an experimental study.

Study participants: Thirty patients with wounds with small patches of slough and/ or pale granulation tissue not ready for grafting and not requiring surgical debridement were included in the study. The following criteria were used in the recruiting of the participants.

Inclusion criteria: Willing participants with wounds with small patches of slough and/ or pale granulation tissue not ready for grafting and not requiring surgical debridement were included in the study.

Exclusion criteria: Unwilling participants and with severe complications were excluded from the study.
After recruiting the participants were grouped into two groups by random numbers generated by the software randomizer.org. The first group received normal saline dressing and second group received the honey dressing.

Dressing method: The area to be dressed was measured. Sterile gauzes soaked in a commercially available tube packed honey and normal saline available as intravenous drips were applied over the wounds. Both wet dressings were covered with sterile cotton and crepe bandage.[9,10] The dressing was changed on daily basis and the wound was examined.

Ethical considerations: The study protocol was approved by the institutional human ethical committee. Informed consent was obtained from all the participants.

Data analysis: Data was analysed using SPSS 20.0 version. Data was expressed as frequency and percentage.

RESULTS:

There was 12 female participants and 18 male participants in the study. The age range was 25 years to 50 years. The etiology of wounds was explained in the table 1. In the normal saline group, 53.3 percentage of wounds are burn wounds and 46.6 percentage of wounds are post infective wounds. In the honey group, 40 percentage of the participants are burn wounds and 60 percentage of wounds are post infective wounds. The variables were compared between the normal saline group and honey group was presented in table no 2.

Table 1: The Etiology Of The Wounds In Normal Saline Group And Honey Group

Etiology	Normal saline group (n=15)	Honey group (n=15)
Burn wounds	8 (53.3)	6 (40)
Post infective wounds	7 (46.6)	9 (60)

Data was expressed as frequency and percentage

Table 2: Comparison Of Normal Saline And Honey Dressing On Wounds

Variables	Normal saline group (n=15)	Honey group (n=15)
Duration of wound	10	13
Preparation (Average days)	2.2	3.6

DISCUSSION:

It is most important to prepare the wound successfully before the process of grafting. The dressing material must be sterile so that it will not cause any harm to the cells involved in the healing of the wounds. Though traditional dressings have been used in the clinical scenario, there is still a need for scientific evidence for the same.[11] The present study was undertaken to compare the effectiveness of normal saline and honey gauze dressing in the management of wound healing.[12] Honey has anti-inflammatory properties which it helps in the healing of the wound. Further, the osmolality of honey is high which is thought to be the key to multiple benefits of honey.[13] Further, honey has the ability to inhibit the growth of microbes with its antimicrobial activity and hyperosmolality.[14] In the case of the saline dressing, the fluid evaporates and draws the fluid from the wound by osmosis. Further, normal saline has anti-inflammatory properties and increase local blood flow, and prevents the development of edema. The advantage of these natural dressings is that they will not interfere with the healing process.[15] There were 12 female participants and 18 male participants in the study. The age range was 25 years to 50 years. In the normal saline group, 53.3 percent of wounds are burn wounds and 46.6 percent of wounds are post-infective wounds. In the honey group, 40 percent of the participants are burn wounds and 60 percent of the wounds are post-infective wounds. The variables were compared between the normal saline group and honey group and it was observed that normal saline has better wound healing effects than honey.

CONCLUSION:

The study results suggest that normal saline is better dressing material when compared to honey. Further detailed studies are required in this area to suggest normal saline as the natural and cost-effective dressing material.

CONFLICTS OF INTEREST: None declared

SOURCE OF FUNDING: Self-funding

REFERENCES:

1. Robert DG, Thomas AM. Wound care In- Charles HT, Robert WB, Sherrell JA, Scott PB, Geoffrey CG, Scott LS; Grab and Smith's Plastic Surgery. 6th ed, Philadelphia- Lippincot William and Wilkins. 2007; 27.
2. Christian EP, Jeffrey JP, Peter R. Skin Grafts InStephen JM. Plastic Surgery General Principles. 2nd ed, Philadelphia- Saunders Elsevier. 2006; 299.
3. Bohdan P, Tobias H, Elof E. Wound management In- Bahman G, Elof E, John AP, Plastic Surgery. 1st ed, Philadelphia- Saunders Elsevier. 2009; 31.
4. Archer HG, Barnett S, Irving S, Middleton KR. Seal DV. A controlled model of moist wound healing- Com-parison between semipermeable film, antiseptics and sugar paste. J Exp Patho. 1990;71(2)155-170.

5. Gajiwala K, Gajiwala AL. Evaluation of Lypholized, gamma irradiated amnion as a biological dressing. Cell Tissue Bank. 2004;5(2)73-80.
6. Ayodeji AS, Innocent OI, Olatunde OO. A comparison of the effect of chlorhexidine, Tap water and Normal saline on wound healing. Int J Morphol. 2006;24;673-676.
7. Lim JK, Saliba L, Smith MJ, McTavish J, Raine C, Curtain P. Normal Saline wound dressing─ is it really normal. Br J Plast Surg. 2000;53(1)42-45.
8. Owen AM, Lesley AS, Fiona C, Kate S, Henery JM, Andrew RM. Systematic review of the use of honey as a wound dressing. BMC Complimentary and Alter-native Med. 2001;1(1)2.
9. Alex S, Ian LV, Ernest KM. Grafts: In: Bahman G, Elof E, John AP. Plastic Surgery. 1st ed, Philadelphia- Saunders Elsevier. 2009;97.
10. Copper RA, Molan P, Harding KG. Antibacterial activity of honey against strains of Staphylococcus aureus from infected wounds. J Ray Soc Med. 1999;92(6)283-285.
11. Cooper RA, Molan PC. The use of honey as an anti-septic in managing Pseudomonas infection. J Wound Care. 1999;8(4)161-164.
12. Karayil S, Deshpande SD, Koppikar GV. Effect of honey on multi-drug resistant organisms and its synergistic action with three common antibiotics. J Postgrad Med. 1998;44(4)93-96.
13. Sibbald R, Williamson GD, Orsted H, Campbell LK, Keast D, Krasner D, et al. Preparing the wound bed─ debridement, bacterial balance and moisture balance. Ostomy/Wound Manage. 2000;46(11)14-35.
14. Whaley S. Tap water or normal saline for cleansing tra-umatic wounds. British J Community Nurs. 2004;9(11)471-478.
15. Bradley M, Cullum N, Nelson EA, Petticrew M, Sheldon T, Torgerson D. Systematic reviews of wound care management- Dressings and topical agents used in the healing of chronic wounds. Health Technol Assess. 1999;3;1-35.