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A Novel Approach of Wound Bed Preparation Using Dermatix Wound Care.

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INTRODUCTION

- When biological tissues like skin, mucous membranes and organs are damaged – a wound is formed. Surgical wounds can be classified (SWC) into 4 classes - Class 1 – Clean wounds, Class 2 – Clean Contaminated, Class 3 – Contaminated wound, Class 4 – Dirty wounds [1]. There are numerous modern dressings which are available currently in the market as an adjunct for faster wound healing [2]. Amongst these modern dressing, the introduction of hydrogel to facilitate a moist environment for wound bed preparation is cited in numerous articles [3]. Carnosine, a dipeptide which is widely found in human skeletal muscle is a dipeptide which promotes new vessel growth and a free radical scavenger [4]. The combination of hydrogel polymer with carnosine may improve wound bed preparation and accelerates wound healing.

MATERIALS AND METHODS

- This is a prospective cohort study of all wounds treated by a single surgeon using Dermatix Wound Care (DWC) that is a hydrogel which contains carnosine at KPJ Bandar Dato Onn' Specialist Hospital from August 2023 till July 2023.
- All wounds were treated by a single surgeon with dedicated wound care nurses. Photographs of all wounds were taken as evidence during each session of patient dressing with patients consent. All wounds were cleansed with normal saline and an antibacterial cleansing solution followed by the application of DWC on the wound bed. This procedure was repeated daily until complete healing of the wound.
- The objective of this study is to study the efficacy and suitability of this modern dressing in various types of clean, contaminated and dirty surgical wounds.
- Main variables of interest were patient demography, comorbidities, length of hospital stay, wound type, antibiotic usage, admission infective markers, anatomical site of wound with outcomes of time to full epithelization of wound and time of usage of DWC and complications.







RESULTS

Demography

- A total of 32 patient with various types of wounds was treated at this facility and included in this study from August 2023 to July 2024. Amongst, 23 patients had completed treatment (full epithelization of wound) and 9 patients were still undergoing wound care.
- Contaminated/Dirty: 27 patients; Clean - Wound due to trauma: 3 patients / Burn wounds: 3 patients
- Anatomical location – axilla (1), breast (3), anterior chest wall (2), posterior trunk (5), abdominal wall (5), inguinal (1), gluteal (3), face (4), finger (1), scrotum (1), thigh (1), perianal (1)
- 4 patients (1 lactating breast abscess, 2 post laparotomy deep ssi, 1 post deep space ssi abdominal wall injection)
- Comorbidities – 3 patient had Diabetes and 1 patient had hypertension

Outcome

- Wound culture – Staphylococcus aureus (8patients), Bacteroides fragilis (2patients), ESBL (1) others (9patients)
- Antibiotics – Augmentin (20), Unasyn (6), cefuroxime (5) ciprofloxacin (1)
- HPE – abscess (10), infected epidermal cyst (5), carbuncle (3), folliculitis (2), foreign body granuloma (1)
- **Median (Q1-Q3) days of dressing to full epithelization : 41 (25.3-53.3)days**
- **Mean (Q1-Q3) days of usage of dermatix wound care : 41 (23.5-51.8) days**
- Complications - hypergranulation (2 patients), wound infection (1patient)*, only 1 patient had second dose of antibiotic within course of dressing*

Discussion / Conclusion

- Maintaining wound moisture using advanced hydrogel polymer coupled with carnosine allows the acceleration and good preparation of wound bed – majority of wounds had complete healing within 41days [1,2]. Hypergranulation and wound infection is observed in this study, but its occurrence may be due to patient factors.
- Overall, DWC is a versatile adjunct for clean, contaminated and dirty wounds as seen in this current cohort of patients.

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