The Role of Antimicrobial Activated Carbon Cloth (ACC) Dressing in Primary Health Care Settings: Path to Cost Effective Wound Management

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ABSTRACT

Managing chronic wound is a great challenge and impose significant costs to health care in Malaysia. This case study involves a 44 years old Malay Female with left infected diabetic foot ulcer under Klinik Kesihatan Kuala Besut follow up. Wound measurement at baseline was: L: 17cm, W: 9cm, D: 1cm, which was very sloughy, foul-smelling with heavy purulent discharge and non-advancing wound edges. Dressing with ACC dressing was done twice per week. After 10 weeks, wound achieved great healing and patient is satisfied with the outcome as well as cost effectiveness of this modern dressing.

INTRODUCTION

Worldwide, prevalence of chronic diseases is on the rise, which includes chronic wounds such as diabetic foot ulcers or pressure ulcers. As a result, both the patients and nation healthcare system need to bear large economy burden due to increased costs related to wound care, such as more hospital or clinic visits, hospital stays, dressing changes and nursing care.

Ideal wound care often requires changes in practice, including the implementation of advanced technologies to achieve cost effectiveness of wound care practice.[1] This case study involves usage of a modern wound care primary dressing, an activated carbon cloth dressing (ACC) which plays an important role in cost effective wound care management.

METHODOLOGY

We present a 44 years old Malay Female with known case of diabetes mellitus and hypertension was diagnosed to have left infected diabetic foot ulcer at HUSM, upon discharge from HUSM, she was under Klinik Kesihatan Kuala Besut follow up. On 15/1/2019, wound measurement was: L: 17cm, W: 9cm, D: 1cm, there was more than 75% slough and necrotic tissue, with less than 25% of granulation tissue seen, tendon was exposed as well. There was presence of heavy yellowish discharge with foul smelling odour, wound edges were non-advancing and macerated. Dressing with ACC dressing was done after cleaning and soaking with super-oxidized solution (SOS), twice per week.

RESULTS

After 10 weeks (28/3/2019), Wound measurement was: L:6cm, W: 7, D:0cm, there was presence of healthy granulation tissue with no sign of infection, no foul smelling, wound is moist with advancing edges.

15/01/2019 (BASELINE)
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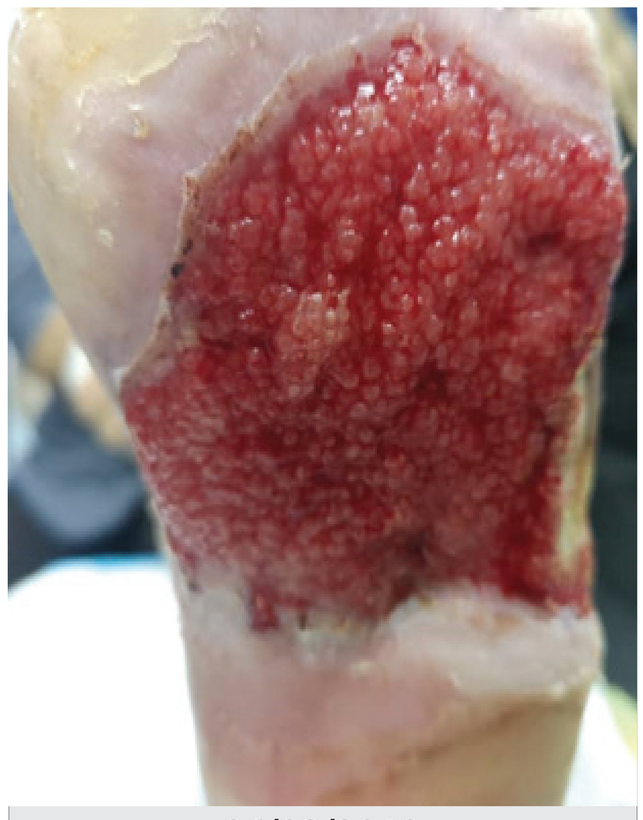
21/01/2019
Presence of less than 15% slough/necrotic tissue, and >85% of granulation tissue, tendon was exposed. There was minimal foul smelling odour with no obvious sign of infection. Exudate was minimal, with non-advancing macerated edges.



06/03/2019
No evidence of slough/necrotic tissue, only presence of granulation tissue, tendon was still exposed at lateral side of foot. There is no sign of infection, no foul smelling odour. Wound is moist with advancing edges.

28/3/2019
Wound measurement was: L : 6cm, W : 7, D : 0cm, there was presence of healthy granulation tissue with no sign of infection, no foul smelling odour, wound is moist with advancing edges.

DISCUSSION

In order to manage chronic wound effectively, it is best to prepare the wound bed an optimum environment for wound healing, which is free from infection, no prolonged inflammation and presence of wound healing agents. ACC dressing used in this case study (Zorflex by Chemviron, UK) has natural antimicrobial property, which uses electrostatic forces to trap and kill bacteria, including drug resistant strains of microbes such as MRSA, VRE and Acinetobacter baumannii.[2] In addition, it can regulate level of matrix metalloproteinases (MMPs), a group of enzymes which the level is usually uncontrolled in chronic wounds, such as DFU, which can delay wound healing.[3] Besides that, ACC dressing can promote wound healing by means of conductivity, which can restore body's natural transepithelial potential to aid healing. ACC dressing is also demonstrated to be cost effective wound dressing compared with common wound dressings in the market.[4] Moreover, ACC dressing is easy to use and some patients can be guided to change dressing by themselves, which can reduce the frequency of visits to clinic and thus reduce the workload of health care staff.

CONCLUSION

ACC dressing is recommended to be a good option for wound dressing, especially at primary health care settings, which require modern wound dressing to achieve cost effective wound management, as well as improve quality of care to the patients.

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