A Smart Combination Utilising Retrotech Dressing (RTD) and A Plant Stem Cell Biotherapy in Wound Bed Preparation

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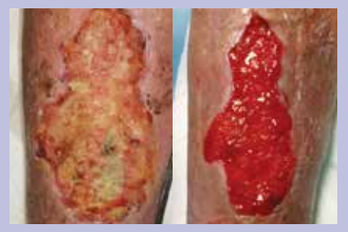
1 **67 years old male**
1 year old wound (non healing leg ulcer)
Co-morbidity: HPT / IHD



Before After 21 days

2 **28 years old female**
7 months old wound (DFU)
Co-morbidity: DM

Before After 7 days After 25 days

3 **53 years old male**
2 years old wound (VLU)
Co-morbidity: DM / HPT

Before After 18 days After 41 days

4 **53 years old female**
3 years old wound (non healing ulcer)
Co-morbidity: Chronic Renal Disease / HPT / DM

Before After 20 days

5 **85 years old Male**
1 year old wound
(Venous Leg Ulcer)

Before After 23 days After 41 days

6 **59 years old male**
5 months old wound (DFU)
Co-morbidity: ESRF / DM

Before After 31 days

7 **50 years old female**
1.5 years chronic non healing wound
Co-morbidity: HPT / Renal Failure

Before After 40 days After 75 days

8 **65 years old female**
4 months old wound (Pressure Injury)
Co-morbidity: DM / HPT

Before After 7 days After 35 days

9 **54 years old male**
5 months old wound (Pressure Injury)
Co-morbidity: DM / Umbilical Hernia Repair

Before After 17 days After 59 days

10 **55 years old male**
3 months old wound (DFU)
Co-morbidity: DM / HPT

Before After 13 days

Introduction

Infection in chronic complex wounds are a big problem especially in Asia. Patients present late and the wounds are infected with slough and pus as well as biofilms. Wound bed preparation is crucial. Therefore we decided to combine two different advanced products namely Retrotech Dressing (RTD) and Nanogen Aktigel which is in managing the infection and removing the slough as well as managing the exudates. RTD is a broad spectrum antimicrobial foam combining Methylene Blue, Gentian Violet and Silver in a higly absorbent polyurethane foam.[1] Nanogen Aktigel adds natural acid into the wound to provide antimicrobial action. It also provides an abundance of nutrients, enzymes and vitamins to the wound and the Antioxidants act as additional nutrition for the wound, whichs helps create the optimum environment for healing.[2] A total of 20 cases were chosen which comprises of 9 diabetic foot ulcers, 4 venous leg ulcers, 4 non healing wounds, 2 pressure injuries and 1 wound dehiscence. All cases were infected with slough.

Methodology

The wounds were assessed using the TIMEs concept for wound bed preparation. The cases were selected by simple random sampling from cases with different aetiologies which were infected with slough attending the Wound Care clinic in Hospital Kuala Lumpur. The wounds were cleansed with an antimicrobial solution and simple desloughing was done. Then the Nanogen Aktigel which is a plant stem cell based dressing was applied lightly and covered with RTD. The patients were followed up closely and the wound bed progression was observed and documented. All cases were managed with standard of care which includes offloading for diabetic foot ulcers, compression bandaging for venous leg ulcers and proper 2 hourly turning with support surfaces for the pressure injury cases.

Result

Incidentally, in this case series we were looking at the component of T,I and M whereby under T there was slough and under I was the infection and M covered the moisture. Meanwhile E which is the edge or the epidermal margin improved when we managed the wound bed. All the wounds showed marked improvement in the management of the bacterial bioburden and the slough. Reduction of slough was seen and the wounds exhibited increase in the granulation and epithelial tissue.

Conclusion

This unique smart combination therapy has exhibited good synergistic action on the cases with different aetiologies. This combination was effective in preparing the wound bed for closure by secondary intention. There was no adverse reactions or allergies. Patients were comfortable with this combination. However, the sample size in this pilot study was only 20 and this was the basis of the limitation. A much larger study needs to be conducted to show the statistical significance of this combination therapy.

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