

Case Series Highlighting the Efficacy of PHMB Wound Dressings for Pain Reduction, Infection Control and Wound Progression

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INTRODUCTION

Effective wound care requires balancing infection management with patient comfort. Polyhexamethylene biguanide (PHMB) dressings have emerged as a solution for reducing microbial load while minimizing pain, particularly during dressing changes. This poster presents two case studies showcasing the clinical and patient-centered benefits of PHMB dressings and their ability to facilitate reduction in wound pain leading to an increase in the quality of life for patients. With prescription of opioids common-place, alternative therapies should be evaluated. PHMB is a broad-spectrum antimicrobial that kills bacteria, fungi, parasites and certain viruses with a high therapeutic index, and is widely used in clinics, homes and industry. It has been used for many years and has not been shown to cause development of resistance; it is safe (non-cytotoxic), not causing damage to newly growing wound tissue. Importantly there is substantial evidence for its effective use in wound care applications, providing a sound basis for evidence-based practice.1

METHOD

A multi-center observational study was conducted involving 172 patients with acute and chronic wounds. Pain levels were assessed using a validated 10-point visual analog scale (VAS) at dressing application, removal, and throughout the treatment period. Wound progression and symptoms of infection were monitored through weekly visits and photographic documentation over a four-week period. All patients met inclusion criteria to be eligible for participation in this study.

Two patients with challenging wound conditions were selected for evaluation. Case 1 involved a 50-year-old diabetic female patient with a chronic venous leg ulcer to the right lateral ankle and Case 2 featured a 52-year-old trauma patient with a large, infected surgical wound following amputation of two toes. Both cases required infection control and pain-sensitive management. PHMB dressings were applied weekly over a 4-week period. Pain levels were measured using a 10-point visual analog scale (VAS) at each dressing change. Wound progression and symptoms of infection were monitored weekly.





Patient 1 at Initial assessment

Patient 2 at Initia assessment

Patient One – Venous Leg Ulcer

Patient 1 presented with a Venous Leg Ulcer on the Right Lateral Ankle showing clear infection. She had a previous history of Diabetes, Venous Stasis, Peripheral Disease, Cancer and was currently taking Paracetamol to manage her wound pain which she score on the VAS scale. She had been managing this pain for several months and this was affect ability to sleep and live her normal life; she was previously treated with a Hydrogel and Gauze without success.

> Size of Wound at Assessmer

> > Size of Wound

week of treat

Size of Wound a

weeks of treat

Size of Wound

3 weeks

treatme

Size of W

after 4 we treatm

Size of V after 5 w treatr

Size of Wound at i

70.8% Reduction in

Exit from study

Assessment

- At initial assessment, a Non-adhesive PHMB foam dressing was applied. Week 1 After one week of treatment, the subject's pain score dropped dramatically to VAS 1. The amount of sloughy tissue had reduced and epithelial tissue was forming. Week 2
- The subject's pain score rose slightly, but there was a clear reduction in wound size

Week 3

A fall in wound pain was observed as well as a continued reduction in wound area

Week 4

Wound Pain score dropped to VAS 0, no signs and symptoms of infection were observed and the wound continued to close

Week 5 – Final visit

The patient exited the study at this point. Wound Pain was zero and no

signs and symptoms of infection. Wound area had reduced 70.8% with

Granulation tissue and Epithelial tissue present.



1 week of treatment



3 weeks of treatment







Chart showing lowering pain scores weekly. Pain as a result of wound infection is caused by the inflammatory response, which is triggered when there are microorganisms in the wound. By reducing bacterial load therefore reducing the inflammatory stimulus to the nervous system, results in a reduction in pain

signs of Cervical d as a 6 ting her Paraffin	Patient 2 presented with a dehisced surgical wound following an ar had a history of Diabetes, LBK Amputation, hypertension, Diabeti There was a real risk of further amputation if this wound did not signs of infection and was measuring Length 10cm, Width 5cm, Area 50.0cm ² , Depth 1cm; Pain VAS 3. At initial assessment, a Non-adhesive PHMB foam dressing was appli Week 1	mputation of two toes. She c Retinopathy, Blind R eye. heal. The wound had clear ed.
nitial	After one week, wound pain had dropped to VAS 0 with a dramatic reduction in wound area. The wound was still showing clinical signs of infection	Size of Wound at initial Assessment
fter 1 hent	Week 3 After three weeks, wound pain was still zero and there had again been another reduction in wound size. The wound was still showing some signs of infection.	Size of wound after 1 week of treatment Size of wound after 3 weeks
nent I after of t	Week 4 The wound had no clinical signs of infection and wound pain was again VAS 0 Week 5 – Final Visit	of treatment 4 weeks 5 weeks
ound eks of ent	Again, the wound was showing no signs of infection and had VAS 0 wound pain. After a 97% reduction in wound size, the patient exited the study and did not have their foot amputated.	Size of Wound at initial Assessment
Vound eeks of nent nitial		

Patient Two - Debiscod Surgical Mound

1 week of treatment 3 weeks of treatment

These case studies demonstrate the dual benefits of PHMB dressings in managing infection and reducing pain, even in complex wounds. These findings underscore the value of PHMB dressings as a patient-centered approach to wound care. Further research is warranted to confirm these

Exit from study

outcomes across diverse wound types and larger populations, but these initial results are highly promising

REFERENCES

- 1) Polyhexamethylene biguanide and its antimicrobial role in wound healing: a narrative review: Journal of Woundcare, Vol 32 No 1, January 2023
- 2) The above case series are published from: ActivHeal® PHMB Foam dressing range: a product evaluation; Forder R, Rogers A, Ousey K, Rippon M, Wounds UK 2024 Volume 20 Issue 1.