



# INTRODUCTION

Wound management is often accompanied by significant pain, which can impede healing and affect patient quality of life. Traditional dressings may address infection but fail to prioritize pain reduction. This study evaluates a novel wound dressing containing polyhexamethylene biguanide (PHMB), which is designed to reduce microbial load, promote healing, and minimize pain. Its innovative design aims to provide a gentler healing experience, reinforcing the principle that healing shouldn't hurt.

## 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 the following inclusion criteria to be eligible for participation in this study:

- Have a pressure ulcer, leg ulcer, diabetic leg and foot ulcer, surgical wounds, and partial thickness (second degree) burns that are infected following assessment of sign and symptoms of infection with moderate to heavy levels of exudate.
- Have wounds at high risk of infection.
- Males or females, age 18 years or above.
- Subjects are able to understand and give informed consent to take part in the study.

Exclusion criteria included but was not limited to; non-compliance with medical treatment; known sensitivity to dressing or components; pregnancy; life expectancy of <6 months; Maximum burn area of >20% total body area. The study was conducted according to GCP principles, Declaration of Helsinki, ISO 14155, country specific laws and regulations concerning the conduct of clinical studies with medical devices.

# **Antimicrobial PHMB Dressings: A Solution for Pain Reduction During Healing**

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RESULTS

Wound Type Pressure ulcer Leg/Foot ulcer Diabetic ulcer Surgical Wound Superficial burn Deep burn

**Figure 1** – Baseline wound characteristics of completer primary wounds

Characteristic	(
Number of Primary Wounds at 6 weeks	
(endpoint)	
Success at 6 weeks	
Failure at 6 weeks	
97.5% 2-Sided Cl	





**Figure 3** – Number of wounds infected at baseline and study exit. Of the 32 that still did show signs of infection, only 6 of these showed worsening of infection and were considered failures.



**Figure 4:** 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

# **Completer Population**

- n(%)
- 24 (14.0)
- 55 (32.0)
- 24 (14.0)
- 40 (23.3)
- 18 (10.5)
- 11 (6.4)



The PHMB dressing demonstrated dual benefits: effective antimicrobial action and significant pain reduction throughout healing. These findings suggest that incorporating PHMB into wound care may address two critical patient concerns pain and infection—without compromising healing outcomes. This dressing represents a promising alternative for pain-conscious wound management, reinforcing patient trust and adherence in care pathways. These results align with broader clinical evidence (Forder 2023; Barrett 2017) supporting PHMB as an effective topical antiseptic capable of disrupting biofilm and preventing reinfection. This is especially relevant in chronic wounds, where biofilm and inflammation perpetuate a cycle of delayed healing, exudate buildup, and patient discomfort.

Notably, the study highlights a dual benefit of the PHMB dressing: infection control and pain reduction. Patients experienced a consistent decline in pain, as measured by VAS, from baseline to study conclusion. This correlates with existing research linking bacterial load to nociceptive activation through inflammatory mediators (Wynn 2021). By addressing the source of inflammation—microbial colonization the dressing not only supports healing but also reduces the patient's sensory burden, improving quality of life and treatment adherence.

In this evaluation it has been shown that the PHMB Foam dressing reduces the level of infection in infected wounds while, at the same time, managing the exudate produced in moderately and highly exuding wounds. Wounds treated with the PHMB Foam dressing show good wound progression that leads to an improvement in patient Quality of Life, as evidenced in the reduced pain levels experienced by patients. The clinical evidence from clinical studies and case reports, detailing the experience of 179 patients, supports the use of the PHMB Foam dressing as an effective dressing for promoting infection resolution in wounds showing the signs and symptoms of infection.

- 32
- https://doi.org/10.12968/bjon.2017.26.12.s24

### DISCUSSION

### CONCLUSION

### REFERENCES

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