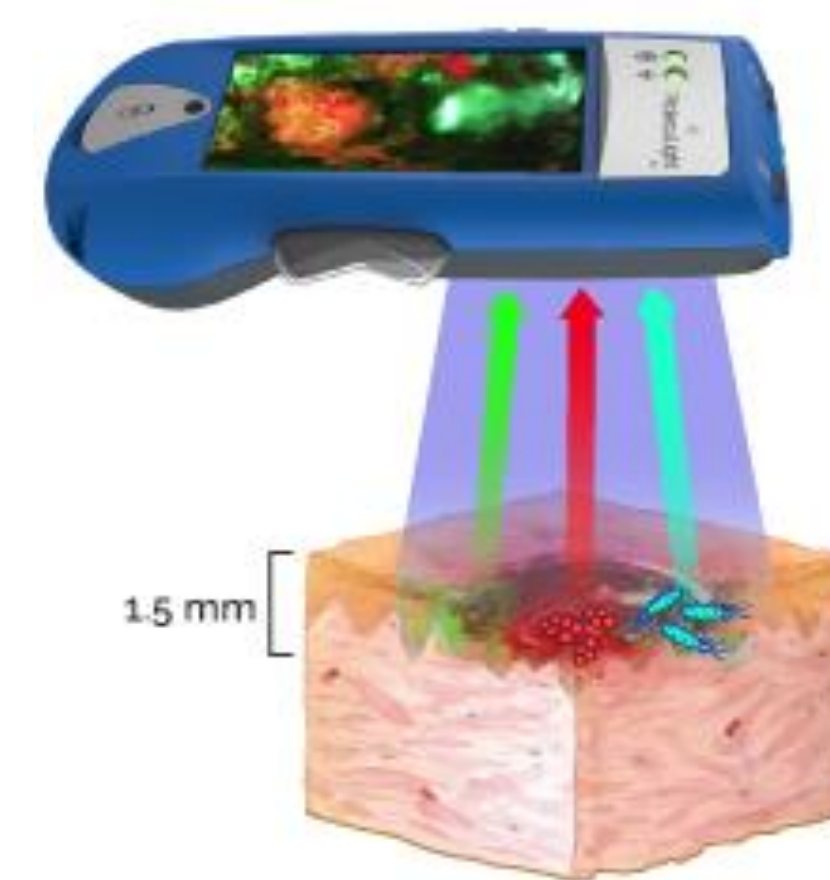


Addressing Infection Risk and Pain in Hard-to-Heal Wounds with a Bioresorbable Antimicrobial Matrix Containing Lidocaine HCl: A Case Series

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Introduction

- Patients with diabetes experience higher rates of wound complications.
- Fully synthetic, bioresorbable antimicrobial matrix containing metallic and ionic silver can enhance healing of diabetic foot ulcers and potentially reduce surgical site infection risk.
- Porous, ultra-thin matrix conforms to wound-bed microtextures, potentially allowing more effective bacterial clearance at the tissue surface than traditional antimicrobial products, which we measured in this series via fluorescent imaging device.



Detects fluorescent bacteria at levels of $\geq 10^4$ CFU/g

Image sourced from MolecuLight®, Inc.

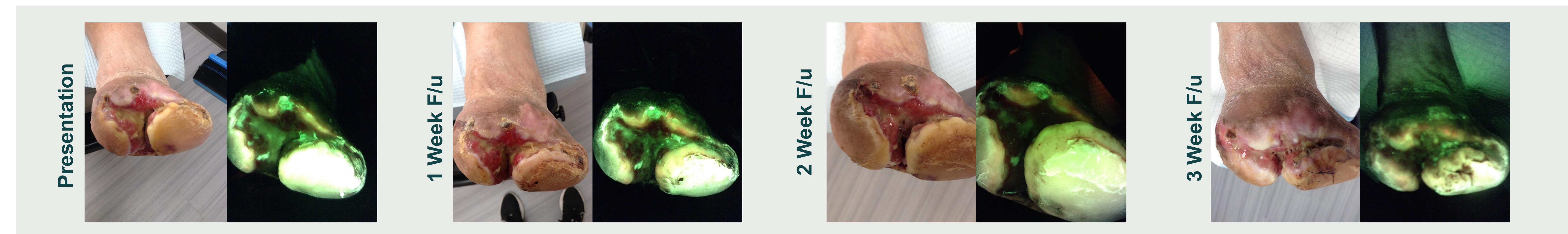
Red fluorescing bacteria
• *Staphylococcus aureus*, *Escherichia coli*, etc.
Cyan fluorescing bacteria
• *Pseudomonas aeruginosa*

- Lidocaine HCl was recently added to the product to improve pain management. This case series reports on the use of this matrix to mitigate infection risk and alleviate pain in nonhealing diabetic foot ulcers.

Case Descriptions

1 53-year-old male w/ T2DM, HF, HTN; hx of diabetic neuropathy and tobacco use; on anticoagulant

Nonhealing surgical site ~71 days post-amputation w/ tissue transfer; Wagner grade 3 (prior infection). Bacteria load reduced below fluorescent imaging threshold in 2 weekly applications, with 32% wound size reduction in 3 weeks.



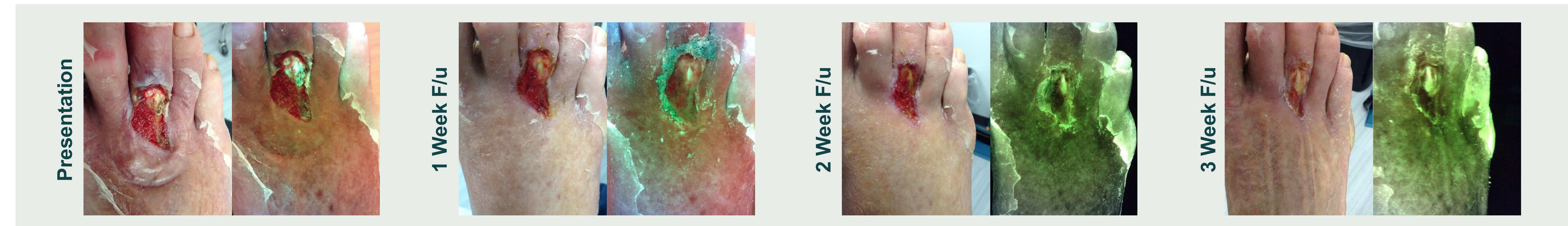
2 53-year-old male w/ T2DM, HF, HTN; hx of diabetic neuropathy, macular degeneration, HLD, CVI; on anticoagulant

Wagner grad 3 nonhealing plantar wound. 42% wound size reduction in 3 weekly applications, with no infection noted.



3 63-year-old male

Wagner grade 2 nonhealing wound w/ exposed bone. Patient-reported pain reduced from initial 5/10 to 2/10 at 45 mins and 3 hrs post-matrix application. 23% wound size reduction in 3 weekly applications with adequate granulation tissue.



Conclusions

- The bioresorbable antimicrobial matrix with lidocaine HCl supported wound healing progress over three weeks in high-risk patients.
- Detectable bacterial presence was eliminated, and initial pain was reduced in the patient with a non-neuropathic wound.
- This case series highlights the matrix's potential to simultaneously address infection risk and pain in chronic wound management.