Transforming Chronic Wound Healing Outcomes with Vaporox: A Two-Wound Case Series Dustin Kruse, DPM, MA, FACFAS/Donna Sage, M.S.S.A.

Abstract:

Chronic wounds in diabetic patients present significant challenges, often leading to complications such as amputations. Vaporox (Vaporox Inc., Denver, CO), an FDA-cleared, lowfrequency ultrasonic mist therapy, combines hydration with concentrated oxygen to enhance wound healing.

To evaluate Vaporox's efficacy in resolving chronic wounds in a high-risk diabetic patient through two distinct wound cases treated in 2019 and 2024.

Background



Patient Information

- Age: 45-54
- Race: White
- Wound Type: DFU
- Location: Forefoot Lateral Stump
- Wagner Grade: 2.0
- Wound Origin Date: 18.04.2019

Comorbidities

• Type 1 Diabetic



Conclusion

This two-wound case series illustrates Vaporox's potential to accelerate healing and prevent major amputation in highrisk diabetic patients. Mimosa (NIRS) and histology data indicate improved tissue quality, with evidence of increased angiogenesis, nitric oxide activity, reduced inflammation, and the formation of mature scar tissue.





Day 0 - Baseline

- Dense inflammatory nfiltration (blue cells) within weak granulation tissue.
- Poor tissue structure consistent with a chronic, nonhealing wound.





Healing Journey

The patient underwent multiple amputations due to uncontrolled MRSA, leading to a transmetatarsal amputation. In 2019, she developed a new wound that healed with Vaporox, preventing a BKA. She remained healed for five years until a recurrence in 2024, as she returned to the workforce. Vaporox was re-initiated with the 2nd Generation device (VHT-2) and resulted in an even faster positive tissue response than the 1st Generation (VHT-1) device.





Day 14 - Early Response



Change in Baseline Tissue Oximetry (StO2)

oxygenation in 9 weeks of VHT treatment.

Temperature as it Relates to Oxygenation

A decrease paired with rising oxygenation and

- - Re-epithelialization well underway.
 - Pink fibrin present in vessels.
 - Mature collagen and organized scar tissue replacing granulation.

94% Volume healed