Complex Wound Approximation with Progressive Healing Mediator – Human Keratin Matrix

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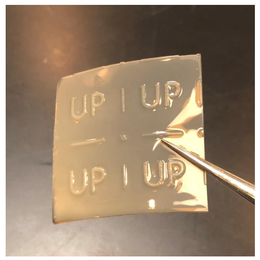
INTRODUCTION

There has been recent interest in "real-world evidence" in the field of wound care, where data is collected on patient samples that more resemble those seen in the clinic rather than idealized study populations [1]. "Real-world" care is often complicated by patient noncompliance with routine wound care for any number of reasons, such as transportation and access to wound care facilities [2].

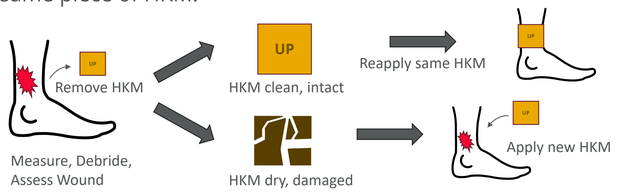
Recent work has demonstrated human keratin matrices (HKMs) to be resistant to degradation in chronic wound environments [3] and may remain effective for several weeks without applying new product [4]. The goal of this work was to evaluate the efficacy of HKM to close chronic diabetic and venous wounds with a flexible treatment and application schedule.



Human Keratin Matrix (HKM)

METHODS

Four established patients at this wound center presented with chronic lower extremity wounds of varying etiologies for >3 months. Patients were seen weekly for wound debridement, measurement, and application of HKM and appropriate secondary dressing changes. Well-progressing wounds with undamaged HKM grafts were redressed with the same piece of HKM.



RESULTS

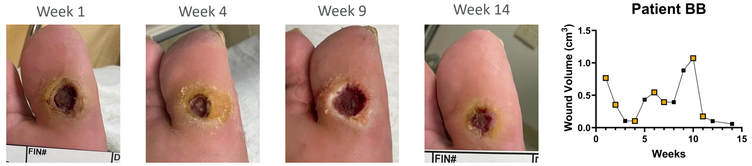
Median HKM Applications	Median Tx Time	Wounds Healed	Median Wound Size Change
4	10 weeks	50%	-96.3%

Legend
- HKM Applied
- HKM Reapplied
- ✱ Wound Closed

Patient BB: 57 y.o. M

Neuropathic ulcer, right great toe
Comorbidities
- Hypertension
- Neuropathy
- Obesity

Tx ended at 15 wks



Patient DB: 46 y.o. M

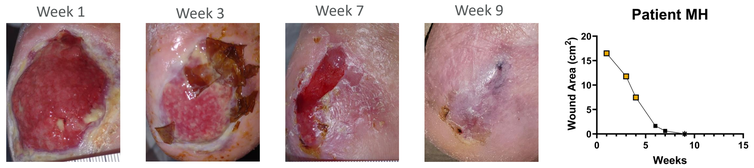
Venous ulcer, left leg (calf)
Comorbidities
- Peripheral artery disease
- Tobacco use disorder
- Type I diabetes mellitus

Closed in 11 weeks, 4 HKMs

Patient MH: 60 y.o. F

Pressure ulcer, left heel
Comorbidities
- Neuropathy
- Type II diabetes mellitus

Closed in 9 weeks, 3 HKMs



Patient PL: 61 y.o. F

Venous ulcer, left leg
Comorbidities
- Hypertension
- Stasis dermatitis of legs (bilateral)

Lost to follow up at 5 weeks

DISCUSSION

In this study, it was observed that HKM supported wound size reduction in a variety of chronic lower extremity ulcers. This is consistent with a recent report in diabetic lower extremity wounds of varying etiologies, which showed increased healing rates with HKM compared to prior treatments [5].

Most research with skin substitute products applies a fresh piece of product weekly. However, several patients in this study experienced gaps in weekly wound care with continued progression to closure. This provides a distinct advantage of HKM for patients with difficulty attending routine appointments.

Additionally, reapplication of the same piece of HKM was employed where possible in this study. This further speaks to the longevity of HKM efficacy in chronic wounds. Additional study is warranted in this area; these results suggest HKM may help attenuate the costs of wound care for patients and payers.

REFERENCES

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