

Sclerodermic foot ulcers:

efficacy of a bioactive dressing and proposal a novel risk stratification model

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INTRODUCTION

Systemic sclerosis (SSc) is associated with microvascular damage and impaired wound healing, making foot ulcers difficult to manage. Currently, **no specific risk stratification model exists for the sclerodermic foot.**

AIM

This study pursues a dual objective:

- Propose—for the first time—a dedicated **risk stratification model for the sclerodermic foot**, currently absent in the literature.
- Evaluate the clinical effectiveness of a bioactive dressing containing Triticum vulgare (TVE) and polyhexanide in treating **non-infected digital ulcers in a patient with systemic sclerosis (SSc)**



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ScleroFoot Risk Assessment Tool

- History & disease subtype
- Comorbidities / vasculopathy
- Foot exam (biomechanics + skin)
- Imaging (ABI, Doppler, capillaroscopy)
- Footwear/offloading

DOMAINS	MAX SCORE
Disease Subtype	10
Biomechanical alterations	8
Ulcer	12
Vasculopathy	10
Comorbidities	8
Footwear & Offload	6

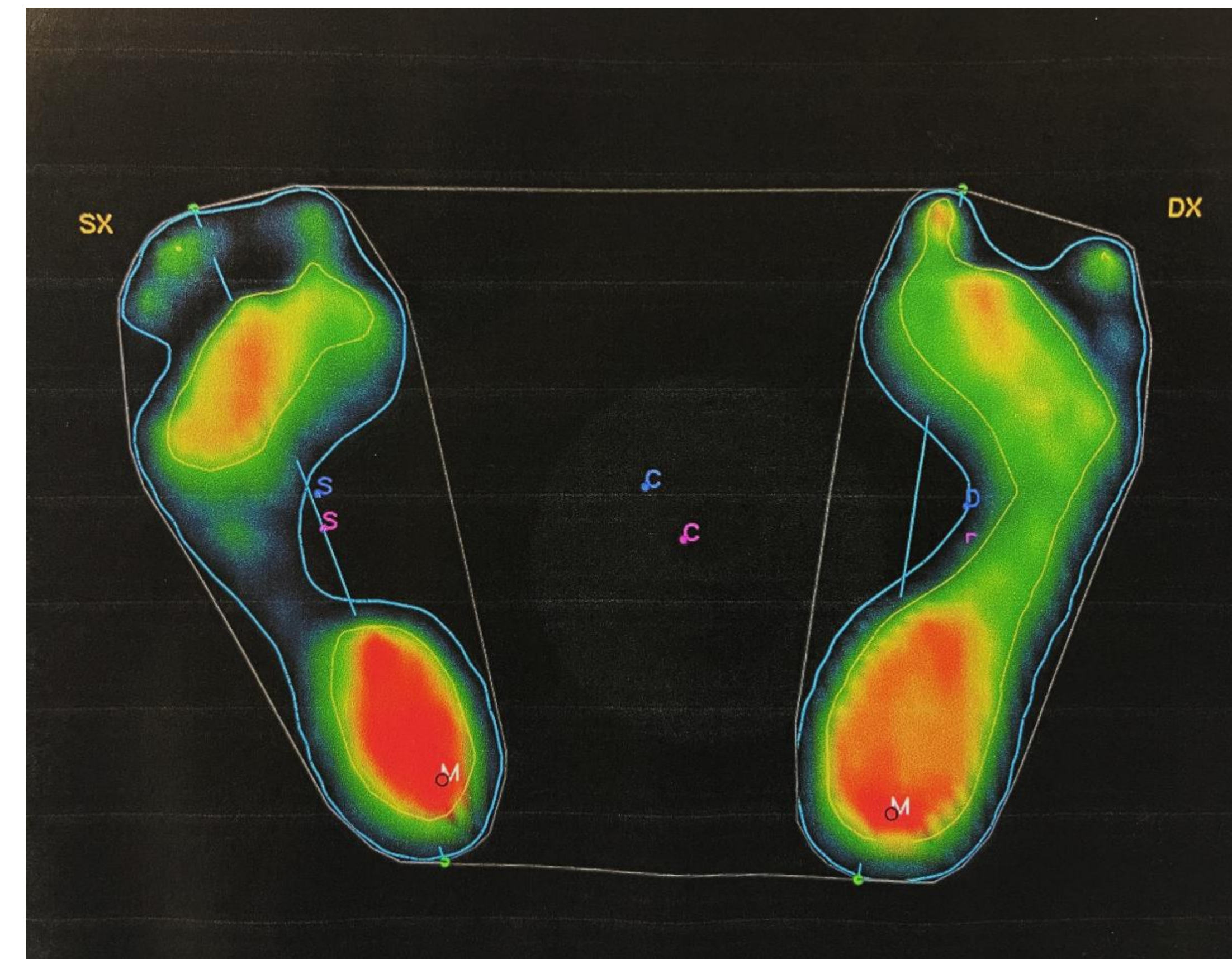
Domain	Low Risk	Moderate Risk	High–Critical Risk
Cutaneous	Minimal skin changes, mild thickening, intact skin without lesions or ulcers	Evident skin thickening, early digital ulcers or active pitting lesions	Severe chronic lesions, ischemic ulcers, or digital necrosis (± calcinosis)
Vascular	Good peripheral perfusion, no signs of ischemia or severe vascular damage	Moderate Raynaud’s phenomenon with occasional digital ischemia	Severe Raynaud’s, recurrent ischemia, tissue necrosis, risk of gangrene
Mobility	Preserved, no pain or functional limitations	Mild pain or stiffness, ambulation still possible	Severely impaired, pain during ambulation, up to immobility
Treatment	Regular monitoring, prevention, proper foot care	Raynaud’s management, wound care, physiotherapy, podiatric care	Advanced multidisciplinary management, functional support
Follow-up	6 months	3 months	1 month – 2 weeks
Score	0-10	11-25	26-40 - >40

CASE REPORT

61-year-old female with SSc
Non-infected, low-exudate digital ulcers

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TREATMENT

SCLERODERMIC ULCER

Cleansing every 48h (TVE + polyhexanide)

Selective debridement

Bioactive gauze

Weekly monitoring:

- Wound size
- Photos
- Pain (VAS)



RISK STRATIFICATION

Classified:

Moderate Risk → Personalized management

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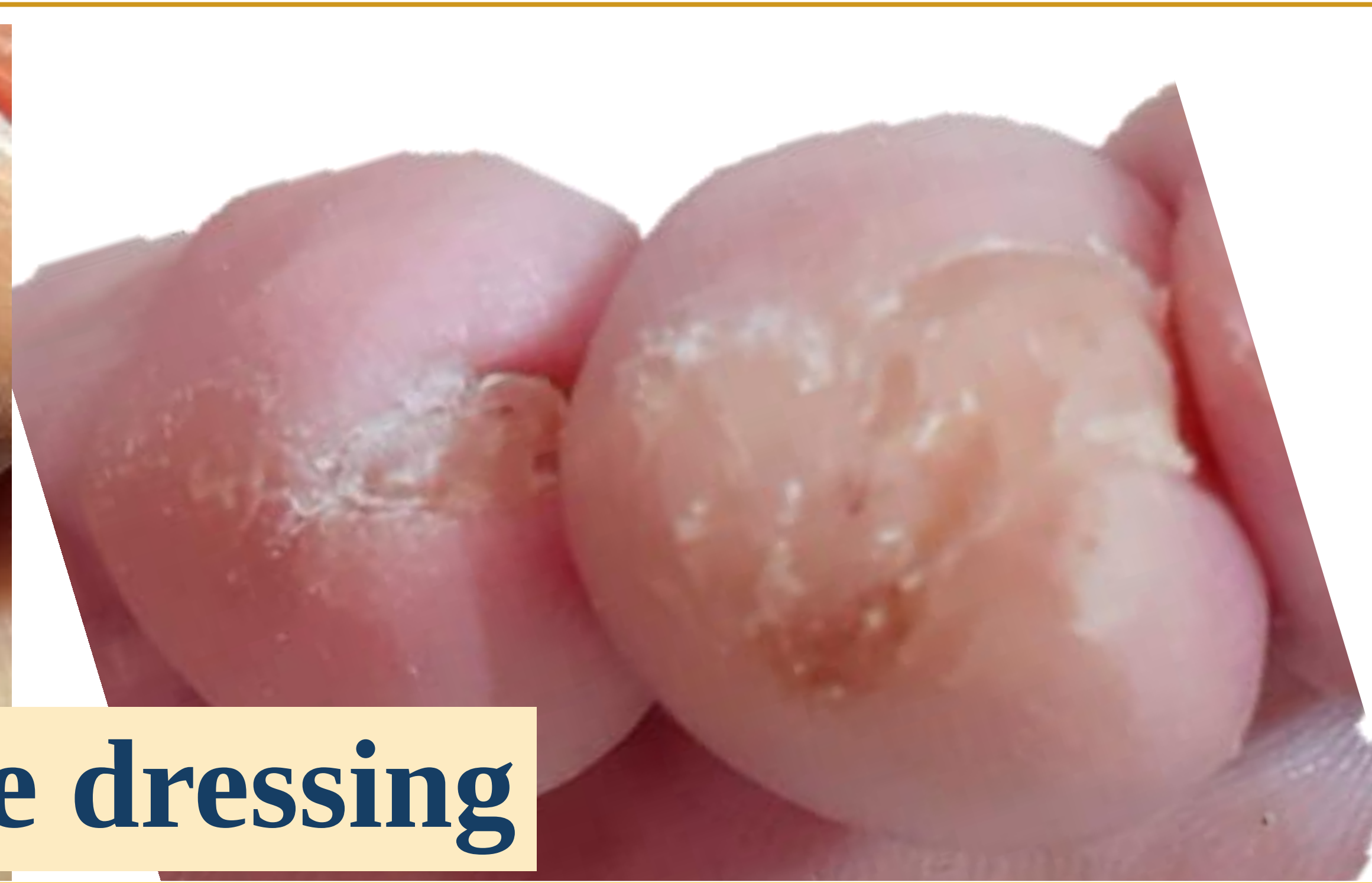
RESULTS

CLINICAL OUTCOME

Healing: 3 weeks (1.4 mm/week)

Pain: VAS 6 → 2

No recurrence (2 months)



Bioactive dressing

T0 12 JULY 2024

T1 18 JULY 2024

T2 25 JULY 2024

T3 1 AUGUST 2024

3 mm 0% R

60% R

90% R

100% R



Standard dressing

T0 23 FEBRUARY 2023

T1 8 MARCH 2023

T2 21 MARCH 2023

T3 5 APRIL 2023

3 mm 0% R

30% R

60% R

100% R

COMPARISON Treatment

- Bioactive dressing **1.4 mm/week → Faster healing with bioactive protocol**
- Standard dressing 0.5mm/week

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CONCLUSIONS

KEY FINDINGS

- ✓ TVE + polyhexanide improves healing
- ✓ Reduces pain
- ✓ Safe and effective

INNOVATION

- First **ScleroFoot Risk Model**
- Early risk identification
- Targeted prevention
- Multidisciplinary support

TAKE-HOME MESSAGE

Combine **bioactive therapy + risk stratification** → *Improve outcomes & reduce complications*

FUTURE DIRECTIONS

Larger studies

Tool validation

References

- Bongi SM, Ravenni G, Ciampi B, Del Rosso A, El Aoufy K. Biomechanical podiatric evaluation in an Italian cohort of patients with systemic sclerosis: A pilot study. Eur J Rheumatol. 2016 Dec;3(4):169-174. doi: 10.5152/eurjrheum.2016.053. Epub 2016 Dec 1. PMID: 28149661; PMCID: PMC5283565.
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