A CALL TO ACTION:
IDENTIFYING HARD TO HEAL VENOUS LEG ULCERS(VLU) USING VALIDATED RISK ASSESSMENT TOOLS AND EARLY INTERVENTION OF ADJUNCTIVE THERAPY

Connie Harris RN, ET, IIWCC, MSc Wound Healing and Tissue Repair, **Dr. Michael Stacey** MBBS, FRACS, Doctor of Surgery

Background

When is it appropriate to consider adjunctive therapies for Venous Leg Ulcers (VLUs)? Experts agree that hard to heal ulcers would benefit from aggressive treatment and adjunctive therapies early in the treatment trajectory, but a review of best practice guidelines shows a lack of consensus as to timing. The literature varies greatly on the average healing times. Smaller wounds of shorter duration generally heal more quickly (1-2). An estimated 30% will remain unhealed at one year, and 10-20% at 2 years (3-5), , including individuals who may never heal (6-7). Patients with delayed or non-healing venous leg ulcers (VLUs) often require nursing care for > 2 years, with incremental increases in costs and negative impact on quality of life. This presentation is a call to action to implement adjunctive therapy within the first two weeks of treatment using a validated VLU Risk Assessment tools.

Method

The Margolis Prognostic Indicators(8-9) (Table 1) and the newer Venous Leg Ulcer Risk Assessment (VLURAT) tools (Box 1) (10-11) are both validated and can predict at the time of admission those VLU's that would not be healed at 24 weeks. Done at baseline, and the VLURAT again at week two, would provide the opportunity to implement more aggressive therapy such as adjunctive therapies earlier in the management of VLU's, improving healing outcomes.

Table 1.

Margolis Prognostic Indicators

Prognostic Indicators	Implication	Scoring (circle)
Wound Surface Area <5 cm² Wound Duration < 6 months	Patients with a score of 0 is likely to heal in 24 weeks with compression therapy.	0 0
Wound Surface Area ≥ 5 cm² Wound Duration > 6 months)	Patients with scores of 1 and 2 are less likely to heal in 24 weeks even with compression therapy.	1 1
		Total Score:

Box 1.

Venous Leg Ulcer Risk Assessment Tool Indicators of Not Healing by 24 weeks http://www.vlur-risk-tools.org.au/

Initial Assessment
1. Age in years?
2. Ulcer duration in weeks?
3. Do they live alone?
4. Calf/ankle ratio?
5. Ulcer mainly slough and/or necrotic tissue?
6. Ulcer area equal to or larger than 5cm²?
7. Current compression systems **less than** 30mmHg?

At 2 Weeks
1. Has the ulcer area reduced by 25% in 2 weeks?

Scores Indicate Low, Moderate or High Risk of Not Healing by 24 Weeks

Discussion

Identification of patients who are NOT going to heal in 24 weeks in spite of appropriate wound care and compression therapy should be done as early as possible in their treatment. Clinicians can then proactively promote wound healing using appropriate adjunctive therapies.

To provide an overview of adjunctive therapies recommended for management of venous leg ulcers, a search for clinical practice guidelines regarding venous leg ulcers, plus the Cochrane Library database (2007-2017) was performed. The therapies having more than 2 recommendations are shown in Table 2, with only Intermittent Pneumatic Compression (IPC) therapy recommended in 4 guidelines.

Table 2.

Adjunctive Therapy Highest Recommendation	Intervention Recommended in Clinical Guideline Key: √ = Yes x = No (Insufficient Evidence for benefit or harm)						
	RNAO (2007)	SIGN (2010)	Austral/ New Zealand (2011)	SVS/ AVF(2014)	Euro Derm Forum (2016)	EWMA (2016)	Cochrane Library
Intermittent Pneumatic Compression Sleeves		x		√	√	√	√
Pentoxyfilline		√		√	Possible		√
Biological Skin Replacements				√	√		√
Supervised Exercise Program (PT)	√	√		√			

New technologies continue to evolve that also merit consideration. An example is the geko™ Wound Therapy device. This is a muscle pump activator worn just below the knee at the fibular head, stimulating the common peroneal nerve. By acting as a calf muscle pump, it can improve many complex factors that contribute to chronic venous insufficiency (CVI) and venous leg ulceration. When compared to Intermittent Pneumatic Compression, the geko™ device is significantly more effective than IPC devices in increasing superficial femoral venous and arterial blood velocity and flow, and microcirculatory flux on the dorsum of the foot ($p \leq 0.001$ for all parameters) (12). The geko™ device combined with best practices has already shown a statistically significant improvement in healing rates with chronic, non-healing VLUs (13-14). Further evaluations and randomized controlled trials are currently underway.

Conclusions

Performing a lower leg assessment and Ankle Brachial Pressure Index, to determine what amount of compression therapy is appropriate for a new patient with a VLU is a key component of best practices. By also determining which patients will have delayed healing proactively rather than retrospectively, clinicians can recommend early intervention with adjunctive therapies in the management of VLU's, resulting in improved healing outcomes, reduced costs, and contributing to improved quality of life.

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Author information

Dr. Michael Stacey is a Professor, McMaster University, Surgeon in Chief Hamilton Health Sciences.

Connie Harris is a Clinical, Education and Research Consultant with Perfuse Medtec Inc.
Connie.Harris@perfusemedtec.com