Healing rate and time to closure of VLUs: a real-world evaluation of a Muscle Pump Activator (MPA) device as an adjunct to compression therapy

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Aim

A service evaluation of a muscle pump activator (MPA) as an adjunct to compression therapy.

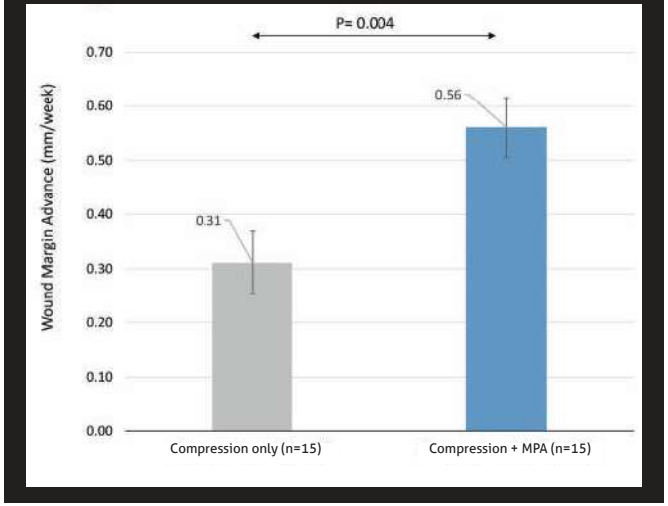
Procedure/Method

- Fifteen (15) patients with venous leg ulcers (VLU) were prescribed MPA, using the geko™ device (W-2) for 6 hours per day, 6 days per week.[1]
- The MPA was applied for 56 days or wound closure (whichever was soonest), in addition to multi-layer compression.
- Wounds were selected for size, with an inclusion criterion of maximum 12cm.[2]
- Wound progress was compared with 15 retrospective control patients, matched for ulcer size and age.[2]

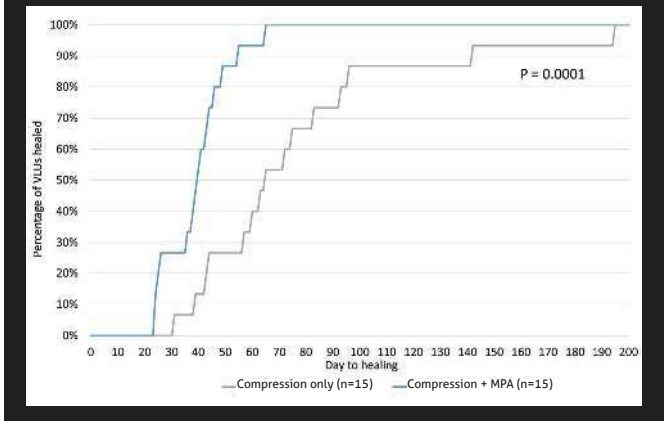
Findings/Results

- The retrospective group had a healing rate of 0.31mm/week (95% CI 29-37 mm/week), whereas the prospective compression + geko™ group had a healing rate of 0.56 (95% CI 50-62 mm/week). p=0.004 (Student t-test).
- All wounds in both groups healed completely during the course of the trial.
- Mean time to closure for the retrospective group was 77 days (95%CI 66-88 days), whereas the MPA group had a mean time to closure of 40 days (95% CI 37-43 days) p=0.005 (Student's t-test).
- The Kaplan Mier plot shows that the trajectory of the geko™ device group diverges from the compression-only group within 23 days, with all patients in the geko™ device group exhibiting complete healing by day 64, as opposed to day 195 for the compression-only group. The difference between the two lots is very highly significant (Log-rank test p=0.0001).

Graph 1: Rate of Wound Margin Advance



Graph 2: Time to Wound Closure



Implications/Applications

- A regimen including MPA as an intervention for the acceleration of wound healing resulted in significantly faster wound margin advance, and significantly less time to heal, than retrospective matched controls.[3]
- In 2023 an RCT of 60 patients by Bull et al it was reported that the MPA device (the geko™ device, W-3 the latest iteration of the geko™ devices for wound care) improved the rate of wound healing twofold when used for 12 hours/day over a four-week period both of terms of wound margin advance and in terms of percentage area reduction.[4]

References

1. Manufacturers Information for Use. Firstkind Ltd. Online available: geko User Information
2. Mississauga Halton LHIN local data 2019
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4. Bull RH, Clements D, Collarte AJ, Harding KG. The impact of a new intervention for venous leg ulcers: A within-patient controlled trial Int Wound J. 2023;109. doi:10.1111/iwj.14107

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