

Topical haemoglobin spray 'kick-starts' 18-month-old chronic leg ulcer

Cheryl Lugton, Tissue Viability Nurse (TVN) Specialist, NHS Borders, Melrose, United Kingdom

European Wound Management Association (EWMA) conference, 01–03 May 2024 Poster ID: EP725

Background

Start of TOT

- Oxygen is a vital requirement for almost every aspect of the wound healing process.¹
- In chronic wounds, sustained oxygen deficit (hypoxia) has been shown to have a detrimental effect on healing.²
- The aim of topical oxygen therapy (TOT) is to reverse localised hypoxia by increasing oxygen levels at the wound site.³
- Topical haemoglobin spray* is one such TOT. When applied to the wound bed, the haemoglobin binds oxygen from the surrounding air and transports it to the wound bed where it diffuses into the cells.³

Aims

- This e-poster presents a case involving a hard-to-heal leg ulcer.
- It has been compiled to highlight how the decision to introduce topical haemoglobin spray* to the treatment regime coincided with a dramatic change in wound healing progress.

Clinical Challenge

- Reduced vascularity
- Localised hypoxia
- High exudation
- Wound infection

Patient and Wound History

- 82-year-old male with medical history of type 2 diabetes mellitus, peripheral neuropathy, chronic kidney disease, acute coronary disease, cellulitis, varicose eczema and deep vein thrombosis; surgical history of left total knee arthroplasty, tibial osteotomy
- Wound located on medial lower left leg, incorporating the malleolus; present for 18 months.
- Peri-wound skin was erythematous and macerated.
- Analgesia administered for pain (10/10 on a scale from 0 = no pain to 10 = worst pain imaginable).
- Previous treatment (10 days before baseline): poly-absorbent fibre dressing with nano-oligosaccharide factor, superabsorbent dressing and compression hosiery.

Interventions and Wound Progression

- Topical haemoglobin spray* was chosen for its ability to improve oxygenation of the wound bed to support healing.
- At each visit, the wound was cleansed using an antimicrobial wound irrigation solution.
- The wound was coated with a thin layer of topical haemoglobin spray* and a barrier cream applied to the peri-wound.
- The wound was dressed with a superabsorbent dressing under wrap compression. After 10 days, the dressing was changed to a self-adherent, soft-silicone-coated foam dressing**.
- Dressings were initially changed 3 times per week; twice weekly in the final 3 months of the case study.



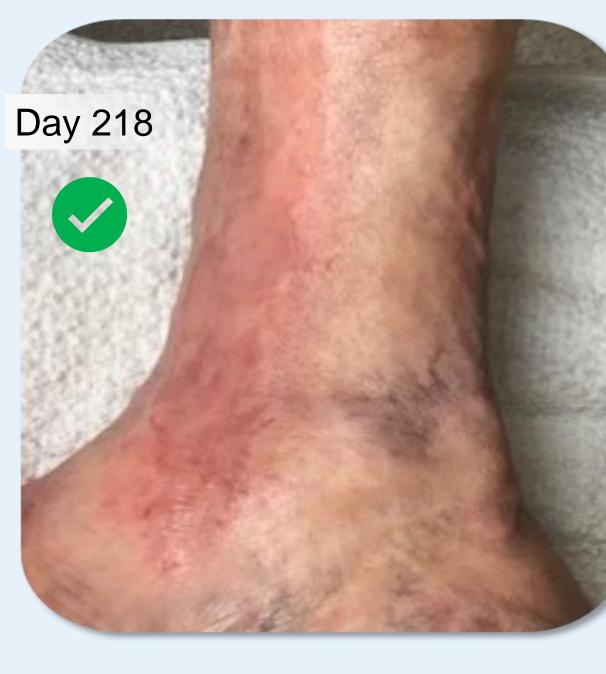












Wound area Wound depth	44.1 cm ² 0 cm
Signs of infection	Erythema, oedema, malodour increased pain/exudation
Viable tissue	0%
Peri-wound	Erythematous; macerated
Exudation	High, viscous, creamy
Pain score	10/10 (morphine)

44.1 cm ² 0.3 cm	42.6 cm ² (↓ 3.4%) 0.3 cm
Reduced	Reduced
40%	70%
Improved	Improved
High, non-viscous clear/serous	Moderate, non-viscous clear/serous
8/10 (morphine)	5/10 (paracetamol)

4 wound islands	Not recorded
0 - 0.2 cm	Not recorded
None	None
100%	100%
Healthy	Deteriorated
Low, non-viscous, clear/serous	Low, non-viscou clear/serous
2/10 (none)	1/10 (none)

0.6 cm ² (↓ 98.6%) 0 cm	Healed -
None	_
100%	_
Improved	Healthy
Minimal, non-viscous clear/serous	_
0/10 (none)	_

Patient's Perspective

The patient was elated with the intervention and thought that the topical haemoglobin spray* had 'most likely prevented amputation'. He said, "the dedication of my Tissue Viability Nurse together with her use of [the] haemoglobin spray have brought about a remarkable change in a relatively short time. In my opinion, following her method a huge saving could be made in the treatment of leg ulcers across the country."

Clinician's perspective



- Approximately 14 months after the wound had healed, another area of skin breakdown occurred to the lower limb; topical haemoglobin spray* was applied again, and the wound healed within a few weeks.
- Following the positive outcome of this case study, the TVN applied to have topical haemoglobin spray* put on the formulary for NHS Borders.
- Topical haemoglobin spray* is considered to be an excellent product for the right wound. Any positive effect is generally observed within 2 weeks of starting treatment, with associated reductions in pain and wound exudate.