

THE USE OF A NOVEL HAEMOGLOBLIN SPRAY TO PROMOTE HEALING IN CHRONIC WOUNDS

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Background

Chronic wounds present a huge burden to the NHS; these include pressure ulcers, leg ulcers and diabetic foot ulcers.

Many intrinsic and extrinsic factors impact on wound healing. One of these is hypoxia, the lack of oxygen to the wound bed. This can lead to the wound entering a pro-inflammatory phase which delays the healing process.

Research has shown that improving the oxygen available to the wound can stimulate wound healing but it has been difficult to achieve in practice.

A novel product, Granulox[®], offered the opportunity to assess if introducing oxygen to the wound by topical application of a haemoglobin spray could stimulate wound healing.

Granulox[®] is an aqueous solution containing haemoglobin molecules which is delivered via a non-aerosol based spray.

The haemoglobin molecule can bind oxygen from the atmosphere, transport it and then release it into the wound bed where oxygen levels are low. This increases tissue oxygen levels and stimulates the healing process. The haemoglobin is not 'used up', so this step constantly repeats itself, allowing large quantities of oxygen to be brought to the wound bed over a period of 72 hours.

Method

10 patients with wounds, of different aetiologies, were treated with the Granulox[®] over a period of 8 - 15 weeks.

Photographs and wound measurements were obtained at base line.

Granulox[®] was applied and an appropriate secondary dressing used depending on exudate levels.

The treatment was applied twice weekly.

Further photographs and measurements were obtained at intervals of 2 weeks, 4 weeks and at the end of evaluation period.

Patient A – Rheumatoid Ulcer > 10 months

52 year old female, Unable to tolerate Doppler ABPI, multiple dressing regimes including antimicrobials; multiple allergies, on anti inflammatory.



19/03/15

Size - 1.5cm x 0.9cm
100% slough
Verbal pain score: 8-9 constantly

Granulox[®] applied 2 x weekly plus non-adherent foam dressing



08/05/15

Size - 1.4cm x 0.4cm
80% granulation and 20% slough
Grade pain as a '3'

Patient reported Granulox[®] as "easy to use", and applied herself at home in between appointments with the Practice Nurse

Patient B - Venous leg ulcers > 12 months

43 year old male, PWID (Person Who Injects Drugs) now stopped. Doppler ABPI plus gold standard treatment for 12 months with no improvement.



30/03/15

Size - 8cm x 4cm
Dull in colour with 100% slough
Pain score: 11/10 in his own words "I want my legs cut off"
Granulox[®], superabsorbent dressings and two layer system of compression bandages.



11/05/15

Pain score rated between 3-4

27/07/15

Size - 7cm x 2.1cm
Healthy 100% granulation tissue
Surrounding tissue improved
Quality of life had much improved.

Patient C - Dehiscd Surgical Wound (BKA) > 9 months

59 year old male with peripheral vascular disease, a range of treatments including antimicrobials, Topical Negative Pressure, Protease Modulating therapy had been tried.



13/04/15

Size - 1cm x 1.5cm x 0.3cm deep
Granulox[®] applied plus silicone foam dressing

12/05/15

Size - 0.5cm x 1.3cm x 0.3cm deep

01/08/15

Wound had healed (no photo)



Patient continued to use Granulox[®] after wound had healed and reported improved skin condition. He was able to wear his prosthesis which improved his quality of life

Patient E – Healing Grade 4 Pressure Ulcer > 15 Years

70 year old female with MS. Long standing PU right ischial tuberosity. Tried all known treatments over the last 15 years. Challenge balancing bed rest and quality of life to heal ulcers. Moisture/excoriation of surrounding skin.



24/04/15

Size – Long side of V shape = 5cm (upper and lower edges),
Width across centre = 2.1cm
50% slough

08/05/15

Size – Long side of V shape 7cm(lower edge) and 6cm (upper edge)
Width across centre = 2cm
100% granulation tissue
Although this wound increased in size this was due to the slough debriding. There was improved quality of tissue. Patient continued using Granulox[®] after the evaluation with continued improvements.



Results

Of the 10 patients who started the evaluation, 8 patients finished with 2 patients excluded from the results as they did not follow the treatment plan. Four patient examples are shown.

Outcomes:

- 1 healed
- 5 progressed towards healing
- 2 became infected and stopped treatment

An unexpected, but positive, result was that some patients showed a marked reduction in pain. For these patients this had become a chronic problem impacting on their quality of life.

Discussion and Conclusions

75% of the patients in this small study showed significant progress towards wound healing with one person experiencing complete healing. Patients reported a reduction in pain resulting in the perception of their overall health being improved.

Due to the simplicity of applying the Granulox[®] spray, several patients were able to apply the treatment themselves.

This small study shows how a novel haemoglobin spray can significantly impact the lives of people living with chronic wounds including:

- Improving healing rates
- Supporting patient self management and empowering them to take control of their care.
- Reducing pain associated with chronic wounds

There is the potential to reduce long term costs to the healthcare system for wound treatments and possibly analgesics due to reduced pain.

Recommendation

Larger studies of patients with chronic wounds using Granulox[®]. This would confirm that patient outcomes around healing and quality of life could be significantly improved.