# The evaluation of SurgihoneyRO™ in the treatment of chronic wounds with suspected biofilms

Lydia Clark, Tissue Viability Nurse, Brentwood Community Hospital

NELFT NHS
NHS Foundation Trust

## Introduction

SurgihoneyRO™ is an antimicrobial wound gel utilising bioengineered honey to deliver Reactive Oxygen® to wounds. It is designed to aid healing by disrupting the biofilm.

NELFT have evaluated SurgihoneyRO™ on 14 patients with a suspected bacteria load and/or a biofilm that have not responded to normal antimicrobial management. The study has taken place within a complex wound clinic at Brentwood Community Hospital. The majority of patients seen in the clinic have chronic leg ulcers or non-healing wounds. Wounds do not heal for a number of clinical reasons including biofilm, bacteria and infection that lead to delays in the healing process. SurgihoneyRO™ has been used due to its antimicrobial and wound healing properties on patients with stalled wounds, where standard care has not worked sufficiently.

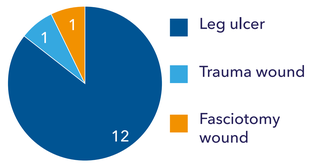
## Method

Fourteen patients with chronic wounds, venous leg ulcers (n=11), trauma wound (n=1), mixed aetiology wound (n=1) and fasciotomy wound (n=1) treated with antimicrobial dressings previously with little effect were recruited. Exudate levels varied from low to moderate (n=12) to high (n=2). Biofilm was suspected to be present in 13 of the wounds.

SurgihoneyRO™ was applied every 72 hours for maximum antimicrobial effect directly to a hydrofibre dressing for ease of application with a secondary absorbent dressing and compression bandages/hosiery.

All patients had at least twice weekly dressing changes and weekly clinic assessments were conducted. Most of the patients were provided products to self-care at home for the second dressing change.

Wound types




## Case studies

### *Patient 1*

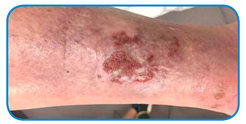
Mrs T is a 64 y-o female who sustained a trauma wound to the right leg in May 2018. The wound became infected and following two courses of oral antibiotics she was assessed by Tissue Viability in June 2018.

She received compression therapy and treatment with various antibiotics and dressings including: Prontosan gel, Durofibre, Aquacel Ag and Inadine over 3 months. Compression was reduced from bandaging to hosiery once the exudate level had decreased.

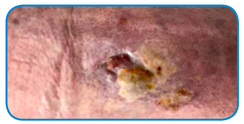
Following initial good results, the wound stalled and appeared to increase in size. She was commenced on the SurgihoneyRO™ trial. SurgihoneyRO™ was applied to Durofibre and covered with a Kliniderm superabsorbent dressing to manage exudate levels. The patient was seen once a week in clinic and she self-cared once a week at home, changing the dressing herself.

The wound responded well to SurgihoneyRO™, the wound size started decreasing after one week of treatment, continuing to decrease over 7 weeks. SurgihoneyRO™ seemed to kick start the healing process again. The wound had appeared to have 100% granulation on the wound bed throughout the healing process, which may indicate the presence of a biofilm.

Mrs T is now only seen once a month. She was very happy with results of the SurgihoneyRO™ trial and feels that it sped up the healing process. She found the dressing comfortable and easy to manage at home.

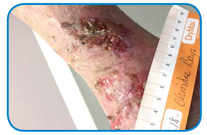


*15/8/18 - Start of SurgihoneyRO™ (wound size 2.4x1.8cm)*

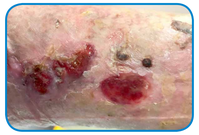


*3/10/18 – Week 7 (wound size 0.5x1cm)*

### *Patient 2*



*15/8/18 – Week 3 of SurgihoneyRO™ (wound size 5x3cm)*



*3/10/18 – Week 10*

Mrs B is a 76 y-o patient who has had leg ulcers since Sept 2017 when she sustained a trauma injury to the right leg. She had a large wound which became infected and required 2 courses of oral antibotics.

From Feb-July 2018 compression bandaging was commenced, and she started on antimicrobial dressings which included Prontosan gel, Durofibre, Urgo-clean and Aquacel Ag. After an initial decrease in size, the wound remained stagnant for a couple of months, then the wound deteriorated again. She started on the SurgihoneyRO™ trial in August 2018. The wound responded very well, it began to shrink in size and the wound bed became visibly cleaner. The wound then divided into islands and epithelised around the edges.

Mrs B has moved from compression bandaging into hosiery. She found the product very comfortable which pleased her as she had been in a lot of pain prior to commencing the trial. Since using SurgihoneyRO™, the patient has been able to cut down her pain relief.

### *Patient 3*

Mr K has a long standing history of chronic leg ulcers. The ulcer to the mid gaiter of the right leg had been there for 2 years, prior to him commencing the trial he had been on a course of flucloxacillin for cellulitis.

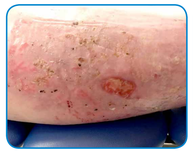
**Week 1** - Initial increase in size, but a small decrease in slough. The edges of the wound may have increased as the wound bed was being cleared of bacteria.

**Week 2** - Another small increase in size but continued decrease in slough.

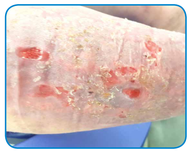
**Week 3** - The wound bed is completely clean and no slough is present. 100% granulation noted. Wound has begun to shrink in size.

**Week 3-6** - The wound continues to shrink in size.

Due to the good results Mr K continued with SurgihoneyRO™ until the wound healed, which took 8 weeks. He reported the pain level of SurgihoneyRO™ to be 4-5/10 throughout the treatment, which he describes as the same as previous dressings he has had.



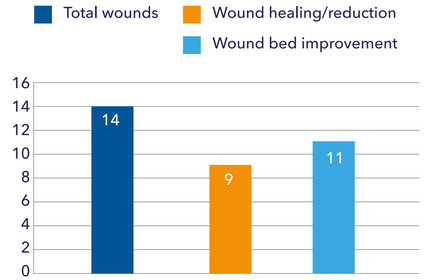
*4/6/18 – Start of SurgihoneyRO™ (wound size 2.9x1.8cm and 80% slough)*



*16/7/18 – Week 6 of SurgihoneyRO™ (wound size 1x1.5cm and 0% slough)*

## Results

Overall the results from the SurgihoneyRO™ trial were positive. 64% (9/14) of wounds went on to heal or show a significant decrease in size within 7 weeks. These patients were able to be discharged from our service.




Wound bed improvements were seen in 79% (11/14) of patients. This demonstrates that the product cleans the wound bed of bacteria and therefore indicates the destruction of a biofilm. 71% (10/14) of patients reported the dressing to be comfortable throughout the treatment.

It is well known that medical grade honey may have a drawing effect which can cause pain in some patients. Within this trial 4 patients reported high levels of pain which they felt was attributed to the SurgihoneyRO™. One patient was taken off the trial after 2 weeks due to an increase in pain and was reluctant to take pain relief as he is already on multiple medications. During these two weeks the wound increased in size, the wound bed however became much cleaner and 100% slough was removed.

The second patient cut the compression bandage off her leg, this patient, however, has been non-compliant with treatment in the past. The third complained of a sudden onset of pain after 5 weeks of using the product and was discontinued. The fourth patient complained of pain after one week and discontinued treatment, it transpired that he had a wound infection and required oral antibiotics to manage this.

SurgihoneyRO™ has proven to be a very good product to de-slough, which inevitably leads to quicker healing, granulation and clearing biofilm resulting in wound healing.

## Discussion

The patients in this evaluation had non-healing wounds despite previous treatment with antimicrobials. The evaluations have proven SurgihoneyRO™ to be an excellent de-slougher with the ability to clear the wound bed of bacteria and slough very quickly compared to other products.

Initially some patient's wounds appeared to grow in size, however this could be due to the wound edges changing shape as the bacteria and slough is disrupted and debrided. After an initial increase in size and change in shape, most wounds went on to reduce in size and heal well. Bacteria often sits on the edges of wounds, the use of the MolecuLight camera has displayed this. SurgihoneyRO™ appears to clear the edges of the wound which seems to aid healing.

Some wounds with appearance of 100% granulation may not be treated with antimicrobials despite not healing as expected, this may be due to biofilm preventing healing. This evaluation implies that some biofilms have been disrupted during treatment with SurgihoneyRO™.

The majority of patients within this trial had low-medium exuding wounds. Only 2 patients with high levels of exudate have so far been recruited for this trial and they were all discontinued due to pain. These patients were not receiving any pain medication. Due to the heavy exudate more frequent dressing changes would have been recommended for maximum effect (more than twice weekly.)

## Conclusion

SurgihoneyRO™ appears to be very effective in aiding the healing of chronic non-healing wounds. It de-sloughs and clears the wound bed of bacteria quickly. There have been mixed reviews on comfort which will be investigated further alongside pain management assessment.

Self-care for patients is empowering, SurgihoneyRO™ is easy for use at home. I would recommend SurgihoneyRO™ for formulary listing within our Trust.

*Supported by an Educational Grant from H&R Healthcare*