

# The use of MIST Therapy on Chronic Wounds

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## Introduction

The MIST Ultrasound system is a wound healing device which has been used widely in the USA and is relatively new to the UK market. The technology is supported by a meta analysis based on RCTs and peer reviewed articles. NICE have recently produced guidance on MIST stating the technology shows potential to enhance the healing of chronic, 'hard to heal', complex wounds compared to standard methods of wound management, with its use well supported by expert opinion.

The aim of this patient trial was to explore the benefits of MIST Therapy in conjunction with conventional treatments on three patients in clinical practice.

## Method

This paper reports on a trial of three patients using the MIST Therapy with ulcer duration between one and three years. All patients were receiving compression therapy.

Two patients had venous ulcers with intermittent pain and one had lymphovenous disease and complained of continuous pain of varying degrees despite taking analgesia.

MIST Therapy was administered 3 x weekly, with the duration of treatment based upon wound size for 18 to 20 weeks.

## Results - Patient 1

Patient 1 presented to the clinic July 2010 with a large almost circumferential ulcer, 38cm in length. She is obese, has lymphoedema with no other underlying aetiology, a history of infections and cellulitis with ulcers for 4+ years. Treatment commenced with short stretch bandaging and good skin care.

The wound improved to 15cm x 12cm when it became static with green discharge, high intermittent pain levels, malodour and high exudate. The wound bed was 95% slough, 5% granulation prior to commencement with MIST Therapy on 17th June 2011.

Following the first treatment the intermittent pain of varying degrees was gone and did not reoccur during the treatment and after the first week of treatment the patient stated "it doesn't smell anymore".

After 12 treatments the wound exudate reduced to moderate levels, the wound to 10cmx9.5cm, slough 30% and granulation 70%.

After 20 treatments the wound size decreased to 9cm x 6cm, slough 10%, granulation 80%, epithelialising 10% and continues to improve, the wound is now 4.5cm x 9cm and 100% granulating.



Week 0



Week 6



Week 18

## Results - Patient 2

Patient 2 is a 30 year old male with a 6 year history of ulcers on his right leg, PMH, recurrent cellulitis, eczema, hyperpigmentation and is allergic to latex. The patient fractured his right tibia as a teenager, aged 24 developed a DVT with an ulcer developing 6 weeks post incident.

He suffered 3 episodes of ulceration, each time the wound healed but the current ulcer presenting for 3 years became more chronic and worsening.

On 6th June he had a pain score of 4 at dressing change, the wound was 7cm x 4cm and varied between 1cm/0.5cm in depth, 10% slough, 90% granulation and high exudate.

At week 1 (3 treatments) the slough reduced to 5% and no pain was reported. By week 3 the wound measured 6cm x 3.75cm and granulating.

The patient had a bad flare up of eczema during the treatment which affected his whole body and the wound parameter (unknown cause) which may have delayed healing as the wound progression slowed during this time.

The wound was granulating to skin level by week 5 and following 8 weeks MIST Treatments (24 treatments) the wound was completely superficial with no depth or pain. The wound is now 2.5cm x 1cm and 100% granulating.



Week 0



Week 5



Week 20

## Results - Patient 3

Patient 3 is a 78 year male who had a recent heart valve replacement and is awaiting a pacemaker. He has a history of varicosities, ulcers for 5 years has had a thyroidectomy, is on warfarin and has bilateral ABPI 1.

The current ulcer presenting for 1 year is 12cm x 4cm with high exudate levels and green discharge. MIST treatment commenced and by week 3 the discharge was moderate and the wound had decreased to 12cm x 2cm.

At week 6 there were clinical signs of infection and high levels of exudate, results have been slower than the other patients. MIST Therapy has continued with the addition of sorbion sachet S, the wound continues to progress and there are now just 3 small unhealed areas on the original site: 2.5cm x 1.0cm, 2.0cm x 0.5cm and 3.0cm x 2.0cm, MIST has also improved patient quality of life due to the pain reduction.



Week 0



Week 8



Week 18

## Conclusion

In all cases there was significant healing and debridement observed in longstanding complex chronic wounds. One of the most significant outcomes for the patient was the cessation of pain after the first week of treatment. All patients enjoyed the therapy and were happy to attend the clinic more frequently.

The nurses were committed to providing treatment 3 times per week during the trial period even though it impacted on their work load. They found the MIST Therapy System easy to administer and were excited to be using the new technology and extending their skills in wound management thus raising the morale of the team.