

The Effect of Adjunctive Noncontact Low-Frequency Ultrasound on Deep Tissue Pressure Injury

Jeremy S. Honaker ^a; Michael R. Forston, MSPT, PT ^b; Emily A. Davis, MSN, RN, CWOCC ^c;
 Michelle M. Weisner, PT ^b; Jennifer A. Morgan, DPT, PT ^b; Emily Sacca, DPT, PT ^b

^a Department of Dermatology, School of Medicine, Case Western Reserve University, Cleveland, Ohio

^b Department of Rehabilitative Services, Baptist Health Lexington, Lexington, Kentucky

^c Department of Nursing Education, Baptist Health Lexington, Lexington, Kentucky

OVERVIEW

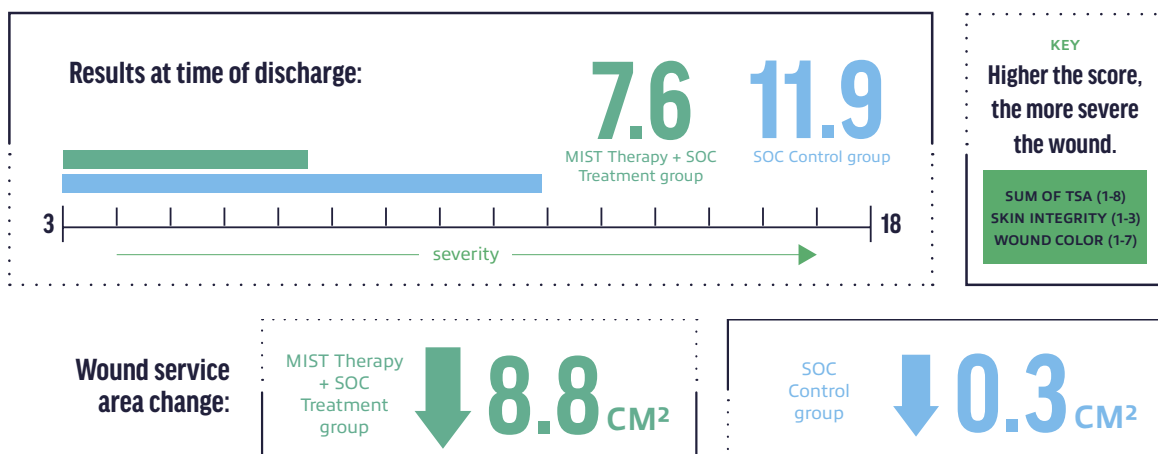
The purpose of this study was to determine the effectiveness of noncontact low-frequency ultrasound in reducing deep tissue pressure injury (DTPI) severity, total surface area, and final pressure injury stage.

Current standard of care in treating DTPI includes pressure relief, protective dressings, and an off-loading schedule. Research suggests that DTPIs have the potential to evolve into full thickness ulcerations despite the implementation of standard of care.

SOLUTION

DTPI severity improved when treated with MIST Therapy* and in conjunction with SOC within 5 days of onset.

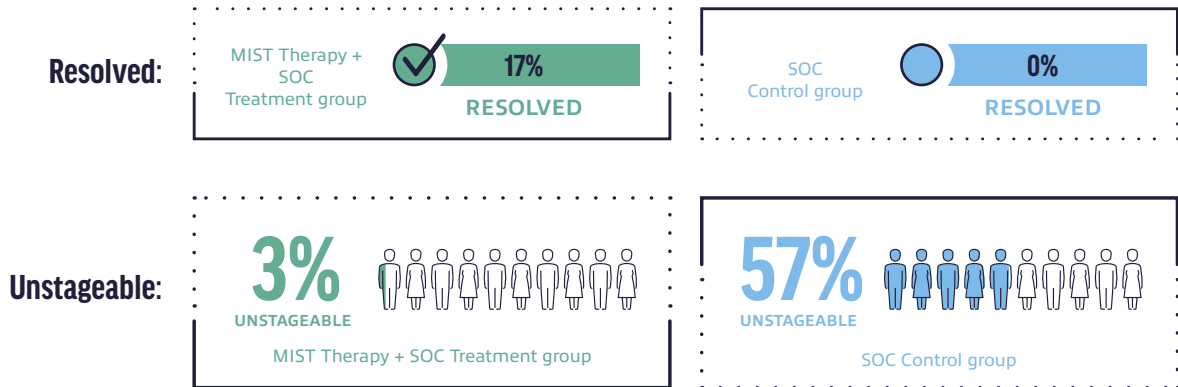
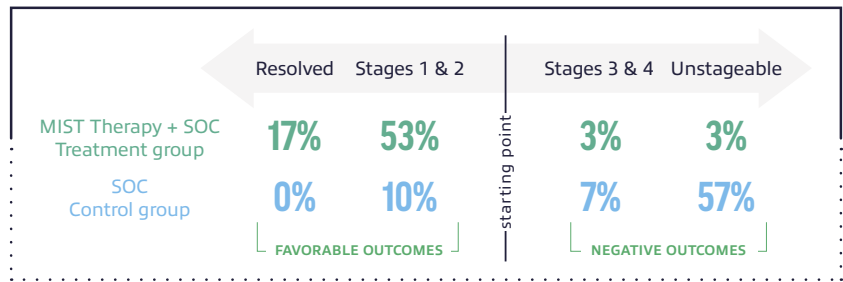
- **Honaker Suspected Deep Tissue Injury Severity Scale:** The Honaker suspected deep tissue injury severity scale (HSDTISS) is an instrument that measures DTPI severity at onset and progression throughout treatment.



*Data was compiled utilizing MIST Therapy. UltraMIST is the next generation of MIST Therapy and maintains the same mechanism of action as the MIST Therapy used this study. *SEE PAGE 2 FOR SAFETY INFORMATION.*

MK2051.003 (03/2021)

- **Final Stage of Pressure Ulcer:**
- The majority of MIST Therapy treatment group progressed toward favorable outcomes while the SOC group moved toward negative end of scale.



CONCLUSION

REDUCED SEVERITY: The progression of deep tissue pressure injuries toward full thickness ulceration is reduced with the addition of MIST Therapy.

STUDY METHODOLOGY

- A longitudinal prospective historical case control study design was used.
- Honaker previously published the results of his retrospective study in International Wound Journal (10, 65-72 [2013]). Both studies were done at a single center (Baptist Health in Lexington, KY). Of note, the standard of care (SOC) did not change between 2008 and 2014 (period of the study [2011-2014] and case controls [2008]) with the same trained physical therapy clinicians. This reports the result of a prospective clinical study that uses historical case controls.
- Average = 7.6 MIST Therapy treatments over a span of 11.1 days with 5.32 minutes duration.

DESCRIPTION AND INDICATIONS FOR USE

Description: The UltraMIST® System delivers low-frequency ultrasound to the treatment site using a noncontact fluid (e.g., saline).
Indications for Use: MIST Systems produce a low energy ultrasound-generated mist used to promote wound healing through wound cleansing and maintenance debridement by the removal of fibrin, yellow slough, tissue exudates, and bacteria.

CONTRAINDICATIONS, POTENTIAL COMPLICATIONS, AND WARNINGS

Contraindications: Do not use near electronic implants/prosthesis (e.g., near or over the heart or over the thoracic area if the patient is using a cardiac pacemaker); on the lower back during pregnancy or over the pregnant uterus; over areas of malignancies.

Potential Complications: Tingling, redness.

Warnings: UltraMIST applicator is designed as a single patient-use disposable unit to avoid contamination. Do not re-sterilize or reuse applicators. Reusing the applicator and/or fluid may result in infection and degraded performance. Do not allow the treatment wand or applicator to contact the patient’s skin directly. Risk of burns: Do not touch the metal tip of the treatment wand during operation.

Please refer to the Instructions for Use for additional information.