# (CR-013) CLINICAL EFFICACY OF A FULL-FUNCTION LIGHTWEIGHT AND PORTABLE NEGATIVE PRESSURE WOUND THERAPY (NPWT) WOUND CARE SYSTEM APPLIED ON VARIOUS WOUND TYPES

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## INTRODUCTION

Prospective non-randomized dual-center interventional study evaluates the use of a full-function personal pump* with dual lumen suction drain** in an advanced wound care clinic setting.

The “goal of therapy” for each individual patient was determined at the beginning of treatment - i.e. decrease wound volume in order to progress for closure by split thickness skin graft etc. Therefore the use of the NPWT pump was to bridge the patient to the next level of care and not necessarily to close the wound within the relatively short 4 week study duration.

## METHODS

- Patients treated in the outpatient clinic and the burn operating room, or at bedside, then discharged soon after.
- Primary objective: Determine acceptable progress towards the goal of therapy when treating multiple wound types when using a NPWT system* during a 4-week study duration as defined by the physician upon initial assessment.
- Twenty-five patients were included with a mean age of 51.2 (SD: 18.2), 14 were men (56%), 14 were African American (56%), 10 were Caucasian (40%), and 2 were Pacific Islander (4%).
- Wound indications ranged from: Diabetic Foot Ulcers, Pressure Injuries/Pressure Ulcers, surgical, acute/traumatic and dehisced wounds, together with various anatomical locations such as lower extremities, abdominal, flank, and back injuries.

| | Baseline (n=25) | | W4 (n=25) | | Change (n=25) | |
|---|---|---|---|---|---|---|
| | Mean (SD) | Median [IQR] | Mean [SD] | Median [IQR] | Mean (SD) | Median [IQR] |
| **Wound Surface** | 51.6 (40.0) | 54.0 [18.9, 66.0] | 25.9 (21.6) | 19.3 [8.3, 41.9] | -25.7 (38.1) | -13.2 [-34.0, -1.0] |
| **Wound Volume** | 174.2 (221.0) | 94.1 [13.7, 165.0] | 36.3 (63.6) | 8.4 [3.9, 34.8] | -138.0 (216.2) | -41.6 [-123.0, -10.5] |

*Table 1: Wound surface and volume at baseline, at week 4 and the change in mean or median between these time points. IQR: interquartile range.*


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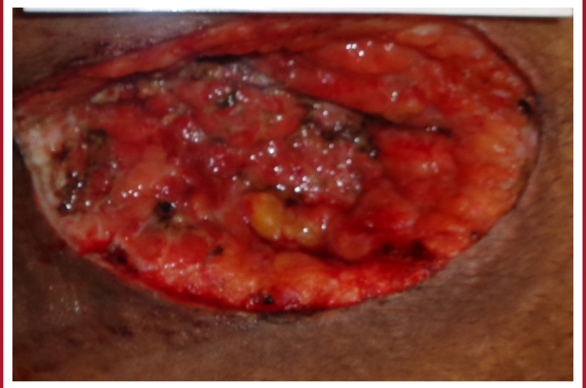
***Patient with ultra portable NPWT system* with dual lumen suction drain*****



***Groin wound week 1***



***Groin wound week 2***



***Flank wound baseline***



***Flank wound week 3***



***Foot wound baseline***



***Foot wound week 2***

## RESULTS

- From the 25 patients enrolled, 18 reached the therapy goal within the study duration. Seven patients terminated the therapy early, with 5 achieving acceptable progress.
- Therapy goals reached for all 18 patients that completed the study in a mean duration of 20 ± 5 days. Outcomes comparable to previous data using the same single-patient-use NPWT system* [1, 2] and with other literature on NPWT treated patients with similar wound indications [3].
- Clinicians were satisfied with the ease of use, dressing change, the intuitive device operation and the dressing seal. Furthermore, patient satisfaction and mobility was perceived very well.

| SUBJECT | WOUND TYPE | LOCATION |
|---|---|---|
| **DOCTORS HOSPITAL OF AUGUSTA** | | |
| 001 | Pilonidal Cyst | Sacrum |
| 002 | Diabetic Foot Ulcer | Right Foot |
| 003 | Pressure Ulcer | Sacrum |
| 004 | Abcess | Right Groin |
| 005 | Full Thickness Wound | Left Flank |
| 006 | Carbuncle | Right Buttock |
| 007 | Dehisced Surgical Wound | Abdomen |
| 008 | Pilonidal Cyst | Sacrum |
| 009 | Abcess | Abdomen |
| 010 | Diabetic Foot Ulcer | Left Foot |
| 011 | Full Thickness Wound | Back |
| 012 | Necrotizing Fasciitis | Right Thigh |
| 013 | Post Amputation Wound | Right Stump |
| 014 | Diabetic Foot Ulcer | Right Foot |
| 015 | Full Thickness Wound | Left Thigh |
| 016 | Necotizing Soft Tissue Infection | Right Foot |
| 017 | Diabetic Foot Ulcer | Left Heel |
| 018 | Diabetic Foot Ulcer | Right Foot |
| **WELLSTAR COBB HOSPITAL** | | |
| 001 | Hematoma | Left Lower Leg |
| 002 | Full Thickness Wound | Abdomen |
| 003 | Non-Healing Surgical Wound | Abdomen |
| 004 | Necrotizing Fasciitis | Upper Back |
| 005 | Abcess | Lower Back |
| 006 | Necrotizing Soft Tissue Infection | Abdomen |
| 007 | Full Thickness Wound | Abdomen |

**For all wounds arterial etiology was ruled out*

## CONCLUSION

**This study confirms earlier evidence that the use of a small portable lightweight personal use NPWT system* supports wound healing for a wide variety of wounds of various sizes through its capacity to accurately deliver set pressure to the wound and efficiently remove exudate. It enables patients to be treated at home, which gains increasing importance in pandemic times, and is easy to handle and operate for clinicians.**

**NOTES**

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Product notation: *Invia® Motion™ NPWT system/Invia® NPWT Dressings | **Invia® FitPad
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Trademarks: Medela, Invia and Invia Motion are registered in the U.S. Patent and Trademark Office and elsewhere.

**REFERENCES**

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