

Cost and Convenience Comparison Between Copper Oxide Dressings to Negative Pressure Wound Therapy (NPWT) - Preliminary Results of a Randomized Controlled Trial



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Introduction

Negative Pressure Wound Therapy (NPWT) is the standard of care for treating large and deep wounds, that are often hard to heal. While cost is a major obstacle to its use its inconvenience for the patient and the applying care giver is another limitation Copper Oxide Dressings (COD) have been recently approved as an antibacterial dressing. Scientific research and clinical experience demonstrated COD positive effect throughout the various phases of wound healing, including stimulation of autolytic debridement, granulation tissue formation and epithelization. This study compares convenience and cost between NPWT and COD in a prospective randomized control trial (RCT).

Methods

RCT with 60 diabetic patients comparing COD to NPWT. Primary end point was reduction of wound size as determined by an artificial intelligence program [Tissue Analytics, (TA)]. Secondary end points included convenience to the care giver and patient (including pain), assessed by Visual Analog Score (VAS); time of application (minutes); and cost.

Results

29 patients have finished the study so far. Of the 14 patients in the NPWT arm, 5 dropped from the study, 4 due to worsening foot condition and 1 due to his general health condition. All 15 patients in the COD arm completed the study. COD therapy was more convenient to the patient [VAS 8.44 (COD) vs. 5.33 (NPWT); p=0.002]; and to the medical personnel [8.29 vs. 6.0; p=0.007].

COD was less painful [VAS 1.15 vs. 2.19; p=0.67]. Mean application time was shorter for the COD compared to the NPWT [8.5 vs. 13.25 minutes; p<0.001].

Cost: Average time of NPWT was 28 days (±17).

Since healing rate was similar in the two treatment arms we estimated the cost of COD in that period to be ~15% of NPWT price.

Reduction of wound size in the COD and NPWT arms, assessed by TA, was 61.5% and 41% (p=0.04) after 1 month, 80.9% and 69% (p=0.28) after 2 months, and 88% and 84% (p=0.17) after 3 months, respectively.

7 wounds (46.7%) were closed in the COD arm and 4 wounds (28.6%) were closed in the NPWT arm, with shorter time to closure of COD compared to NPWT arms [60.14 vs. 77.75 (p=0.18)].

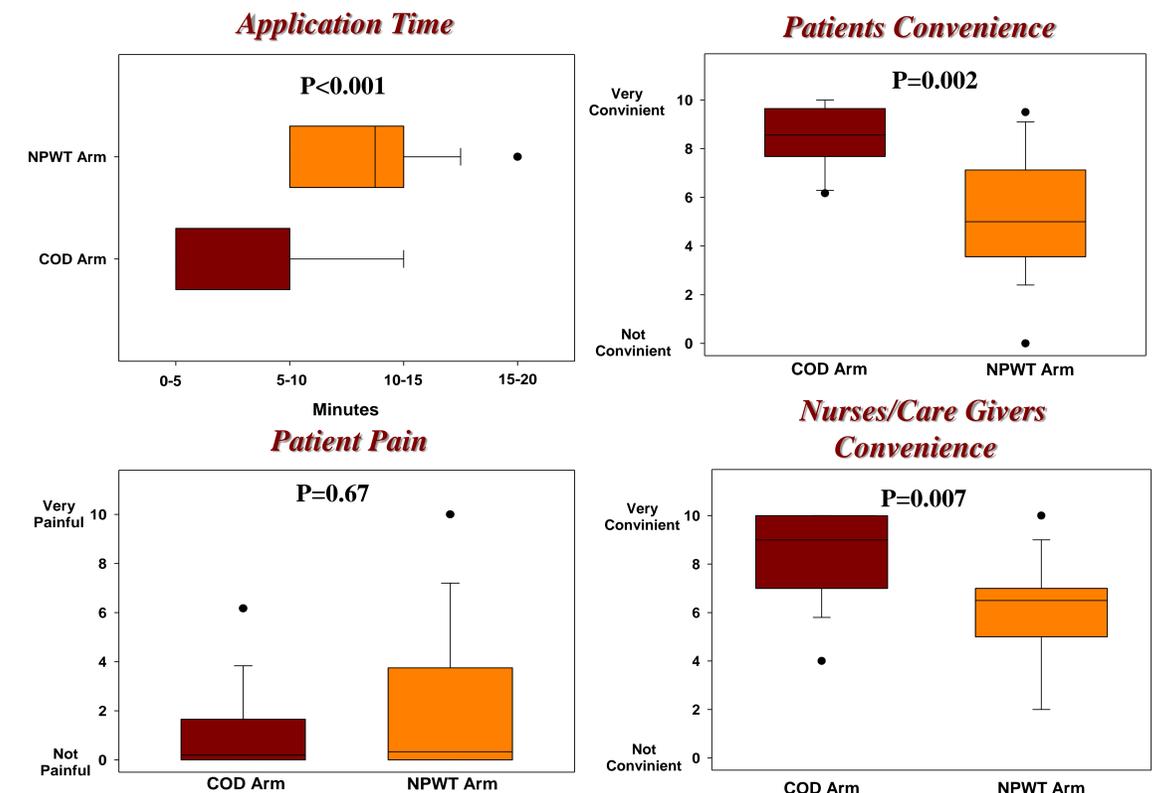
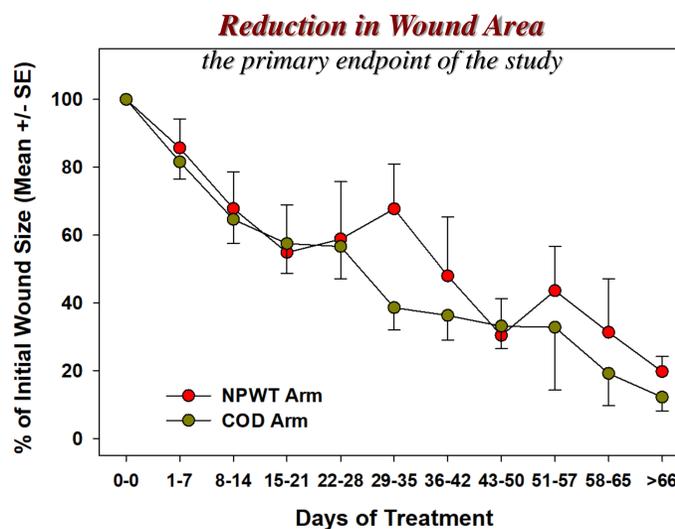
Conclusions

COD was superior to NPWT in terms of convenience, time of application and pain. It was non-inferior to NPWT in regard to wound closure (statistically significant). In addition, treatments cost was greatly reduced (~85%). We conclude that COD should be considered as first line of treatment for wounds in diabetic patients when NPWT is considered.

Disclosure: Dr. Eyal Melamed and Dr. Michael Pinzur are members of the advisory board of MedCu, the COD manufacturing company.



Patient No. 10. - COD Arm



Cost estimation analysis for NPWT Vs. COD (Israel rates expressed in US dollars)

	Treatment (Dressing / Device)	Nurse Home Visits per Week	Total Weekly	Total 4 Weeks
COD	25*	45 (30/visit)	70	280
NPWT	480**	0 (included in the rent)	480	1920

Saving~85%

* average of 1.5 dressings changes per week **including nurse changing visits. In Israel NPWT machine is rented with the wound nurse home service.