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Clinical evidence with V.A.C. VERAFLO™ Therapy.

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Frequency of Surgical Debridement During Use of Negative Pressure Wound Therapy with Instillation* Versus Control: Systematic Review and Meta-Analysis[1]

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Introduction

- Large randomized, controlled trials that evaluate the effects of negative pressure wound therapy with instillation of a topical solution and dwell time (NPWTi-d) are lacking.
- There is a need to synthesize existing data across multiple studies to provide a more precise estimate of the clinical effects of NPWTi-d.

Purpose

- A systematic literature review and meta-analysis of comparative studies were performed to determine the effects of NPWTi-d* versus control therapy in the adjunctive management of complex wounds.

Methods

- We performed a systematic literature review and meta-analysis according to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines.
- Weighted standardized mean difference or odds ratios and 95% confidence intervals were calculated to pool study and control group results in each publication for analysis.
- Thirteen studies comprising 720 patients[1-13] were included in the analysis.

Results

- Endpoint results of the meta-analysis are shown in **Table 1**.
- Significantly fewer surgical debridements were performed in NPWTi-d patients versus control patients (p=0.01) (**Figure 1**).
- Wounds in the NPWTi-d group were ready for closure faster than control wounds (p=0.03) (**Figure 2**).
- The odds of reducing bacterial count from baseline in the NPWTi-d group was 4.4 times greater than control group wounds (p=0.003) (**Figure 3**).
- Percent reduction of bacterial count in NPWTi-d wounds was evident in all studies that captured that endpoint (**Figure 4**).
- Wounds in NPWTi-d group were 2.39 times more likely to close than control group wounds (p=0.01).
- There was a significantly shorter length of therapy in NPWTi-d patients versus control patients (1.5 days vs 3.5 days, p=0.03).

Results (Cont'd)

Table 1. Meta-analysis endpoint results.

Outcome or Subgroup	Studies	Subjects/ Wounds	Standardized means across studies		Effect Estimate Std Mean Difference (95% CI)	Odds Ratio (95% CI)	p-value	I^2
			NPWTi	Control				
Number of surgical debridements	7	495	2.23	3.07	-0.84 (-1.51, -0.17)	N/A	0.01	91%
Time to final surgical procedure (days)	8	525	3.02	4.16	-1.14 (-2.17, -0.12)	N/A	0.03	96%
Length of therapy (days)	4	183	1.52	3.49	-1.97 (-3.75, -0.19)	N/A	0.03	95%
Number of wounds closed	6	413	--	--	N/A	2.39 (1.22, 4.68)	0.01	10%
Subjects with bacterial count reduction	2	86	--	--	N/A	4.40 (1.65, 11.7)	0.0003	0%
Length of hospital stay (days)	3	254	1.17	3.28	-2.11 (-4.35, 0.13)	N/A	0.06	97%

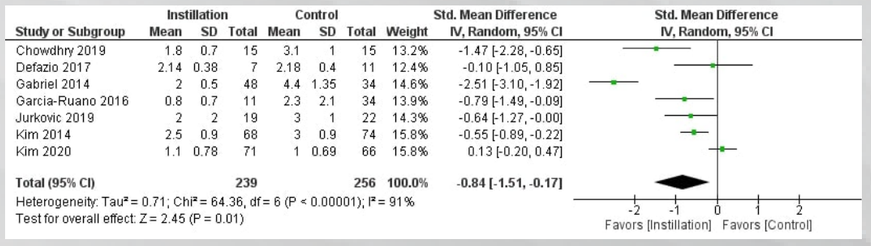

Figure 1. Number of surgical debridements (Forest plot: NPWTi-d vs Control).

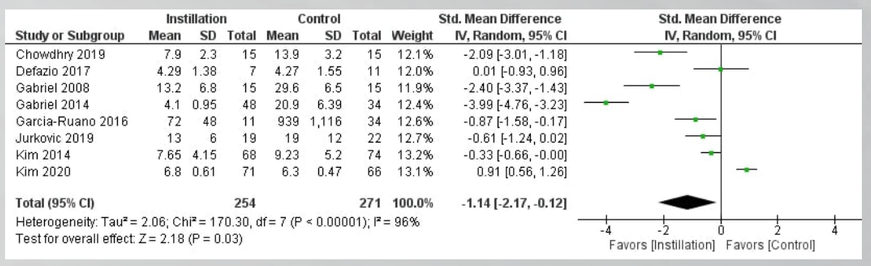

Figure 2. Time to wound readiness for closure (Forest plot: NPWTi-d vs Control).

Results (Cont'd)

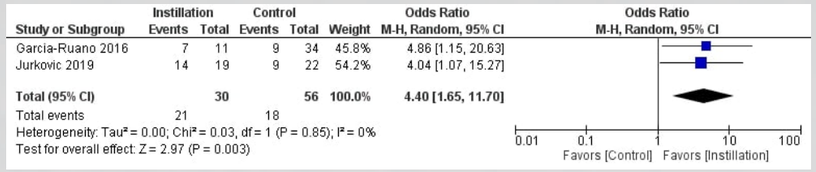

Figure 3. Number of subjects with bacterial count reduction (Forest plot: NPWTi-d vs Control).

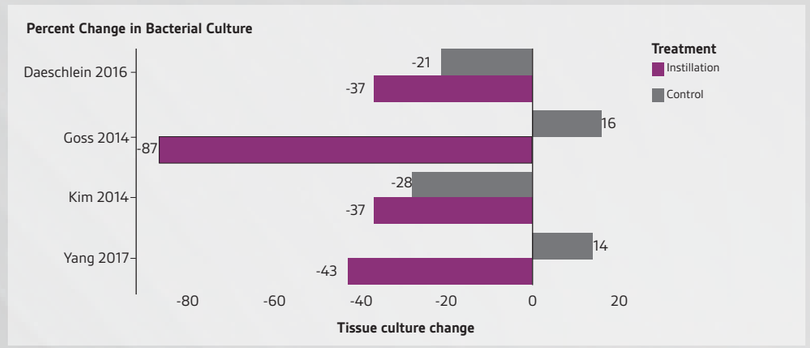

Figure 4. Bioburden level percent change from baseline (CFU/gram).

Conclusions

NPWTi-d, when used in conjunction with good clinical practice (e.g., debridement, appropriate antibiotics), was more beneficial than the comparator with respect to number of surgical debridements during therapy, time to readiness for final wound closure, duration of therapy, number of wounds closed, and number of patients with reduced bacterial bioburden.

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NOTE: Specific indications, contraindications, warnings and precautions, and safety information exist for these products and therapies. Please consult product labeling prior to use.

***V.A.C. VERAFLO™ Therapy, KCI, now part of 3M Company.**

The authors thank 3M for poster preparation and production.

V.A.C. VERAFLO™ Therapy Dressing selection guide

This guide may be used to help clinician decide which V.A.C. VERAFLO™ Dressing to use in conjunction with V.A.C. VERAFLO™ Therapy

	V.A.C. VERAFLO™ Dressings	V.A.C. VERAFLO™ Large Dressing	V.A.C. VERAFLO CLEANSE™ Dressing	V.A.C. VERAFLO CLEANSE CHOICE™ Dressing
Wound Characteristics	Open wounds, including wounds with shallow undermining or tunnel areas where the distal aspect is visible	Large open wounds, including wounds with shallow undermining or tunnel areas where the distal aspect is visible	Wounds with complex geometries, including explored tunnels or undermining where the distal aspect is not visible	Wounds with thick wound exudate, such as fibrin, slough, infectious material
Key Goal(s) of Therapy	• When used in conjunction with V.A.C. VERAFLO™ Therapy, to facilitate the removal of wound exudate and infectious material • Generation of granulation tissue	• When used in conjunction with V.A.C. VERAFLO™ Therapy, to facilitate the removal of wound exudate and infectious material • Generation of granulation tissue in large wounds	• When used in conjunction with V.A.C. VERAFLO™ Therapy, to facilitate the removal of wound exudate and infectious material • Easy application into tunneling and undermining	• When used in conjunction with V.A.C. VERAFLO™ Therapy to help facilitate the removal of thick wound exudate, such as fibrin, slough, and other infectious material, to provide a wound cleansing option for clinicians when surgical debridement is delayed or is not possible or appropriate
Shape	Spiral-cut foam	Block foam pre-slit into two layers	Tubular shape	Block foam pre-slit into three layers
Application Characteristics	**Easy application:** • Size without scissors • Precut area for pad application when used for bridging • Single pad application	**Easy application:** • Ideal for large surfaces areas with shallow depths • Provided with V.A.C. VERAT.R.A.C. DUO™ Tube set for extended surface area coverage	**Application flexibility:** • Ideal for addressing wounds with complex geometries (eg, tunnels, undermining) • Single pad application	**Easy application with flexibility:** • Thin layers for improved conformability • Multiple layers provide application options for wounds with varying depths • Ideal for wounds that require wound cleansing treatment prior to OR debridement or for which OR debridement may not be immediately available • Single pad application

V.A.C.ULTA™ Therapy System ordering information for VERAFLO™ Therapy

Part Number	Description
ULTVFL05SM	V.A.C. VERAFLO™ Dressing, 5-pack, Small
ULTVFL05MD	V.A.C. VERAFLO™ Dressing, 5-pack, Medium
ULTVCL05MD	V.A.C. VERAFLO CLEANSE™ Dressing, 5-pack, Medium
ULTVFL05LG	V.A.C. VERAFLO™ Dressing, 5-pack, Large
ULTLNK0500	V.A.C. VERALINK™ Cassette with 38mm Spikeable Cap Adapter, 5-pack
ULTDUO0500	V.A.C. VERAT.R.A.C. DUO™ Tube Set, 5-pack
M8275063/5	500ml INFOV.A.C.™ Canister with Gel
M8275093/5	1000ml INFOV.A.C.™ Large Canister with Gel
ULTVCC05MD	V.A.C. VERAFLO CLEANSE CHOICE™ Dressing Medium, 5-Pack
ULTVCC05LG	V.A.C. VERAFLO CLEANSE CHOICE™ Dressing Large, 5-Pack

Indications for Use:

The V.A.C.ULTA™ Therapy System is an integrated wound management system that provides Negative Pressure Wound Therapy with an instillation option. Negative Pressure Wound Therapy in the absence of instillation is intended to create an environment that promotes wound healing by secondary or tertiary (delayed primary) intention by preparing the wound bed for closure, reducing edema, promoting granulation tissue formation and perfusion, and by removing exudate and infectious material. The instillation option is indicated for patients who would benefit from vacuum assisted drainage and controlled delivery of topical wound treatment solutions and suspensions over the wound bed. The V.A.C.ULTA™ Therapy System with and without instillation is indicated for patients with chronic, acute, traumatic, sub-acute and dehisced wounds, partial thickness burns, ulcers (such as diabetic, pressure and venous insufficiency), flaps and grafts.

To learn more about V.A.C. VERAFLO™ Therapy, please visit **acelity.com**

As with any case study, the results and outcomes should not be interpreted as a guarantee or warranty of similar results. Individual results may vary depending on the patient's circumstances and condition.

References:
1. Gabriel A, Kim P, Camardo M. Frequency of Surgical Debridement During Use of Negative Pressure Wound Therapy with Instillation Versus Control: Systematic Review and Meta-Analysis. Poster presented at the Symposium on Advanced Wound Care Spring/Wound Healing Society: A Virtual Experience, July 24-26, 2020.

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