ARTICLE SUMMARY

v.a.c. veraflo™

Use of Negative Pressure Wound Therapy with Automated, Volumetric Instillation for the Treatment of Extremity and Trunk Wounds: Clinical Outcomes and Potential Cost Effectiveness

Gabriel A, Kahn K, Karmy-Jones R. ePlasty 2013 (Nov 3);14:328-338.

Study Purpose

This study:

- compared outcomes of patients whose extremity and trunk wounds were treated with either V.A.C. VERAFLO™ Therapy or standard V.A.C.® Therapy, and
- developed a hypothetical model to evaluate the cost effectiveness of the two treatments.

Methods

Study Design: Comparative retrospective study
Study Population: Patients (21-80 years of age) with an infected or critically colonized wound treated with either V.A.C. VERAFLO™ Therapy or standard V.A.C.® Therapy between 1 January 2010 and 31 May 2013

- Patients with pressure ulcers or wounds with infected hardware or implants were excluded.
- 48 patients: V.A.C. VERAFLO™ Therapy with V.A.C. VERAFLO™ Dressing with instillation of either saline or Prontosan®
  (B.Braun Medical Inc., Bethlehem, PA):
  - Set dwell time ranging from 1 to 60 seconds,
  - Followed by V.A.C.® Therapy at -125mmHg for 1 to 2 hours
- 34 patients: V.A.C.® Therapy with V.A.C.® GranuFoam™ Dressing or V.A.C.® GRANUFOAM SILVER™ Dressing at continuous -125mmHg

Methods and Procedures

- All patients were treated by the same investigator using a similar protocol:
  - Wound debridement
  - Systemic antibiotics prior to therapy
  - Dressing changes every 2-3 days
- A hypothetical economic model was developed to estimate average overall costs for V.A.C. VERAFLO™ Therapy vs
  V.A.C.® Therapy during the study timeframe
- Data used in the model included:
  - Mean values of actual study results such as hospital length of stay (LOS), number of surgical debridements, length of therapy (LOT), and time to wound closure
  - Cost of a surgical operating room (OR) debridement ($3,393), based on a published report by Granick and colleagues[1]
  - Total therapy cost was calculated from daily cost of therapy of $194.80 for V.A.C. VERAFLO™ Therapy and $106.08 for V.A.C.® Therapy and average LOT
- Categorical data were compared using Fisher's exact test (two-tailed), and continuous variables were compared using Wilcoxon rank sum test (two-sided).

3M + KCI™

Results

- V.A.C. VERAFLO™ Therapy patients, compared to V.A.C.® Therapy patients:
  - Required fewer surgical OR debridements (2.0 vs 4.4),
  - Experienced a significantly ($p<0.0001$) shorter average:
    - » LOS (8.1 vs 27.4 days),
    - » LOT (4.1 vs 20.9 days),
    - » Time to wound closure (4.1 vs 20.9 days)
- Based on the table below, the hypothetical model demonstrated an average reduction of:
  - $8,143 in OR debridement costs for V.A.C. VERAFLO™ Therapy versus V.A.C.® Therapy patients ($6,786 vs $14,929, respectively), based on average actual frequency of OR debridements (2.0 vs. 4.4, respectively)
  - $1,418 in therapy cost for the V.A.C. VERAFLO™ Therapy group ($799 for V.A.C. VERAFLO™ Therapy vs $2,217 for V.A.C.® Therapy), when average length of therapy was multiplied by the daily cost ($194.80 vs $106.08, respectively).

	NPWTi-d	NPWT	Difference
Patients	N=48	N=34	
Trips to OR for debridement	2.0	4.4	2.4
Mean cost of an OR debridement[1]	$3,393	$3,393	-
Total OR debridement cost	$6,786	$14,929	$8,143
Length of NPTWi-d (days)	4.1	-	4.1
Length of NPWT (days)	-	20.9	20.9
Daily cost of therapy[2*]	$194.80	$106.08	($88.72)
Total therapy costs	$799	$2,217	$1,418

- As with any retrospective analysis, the authors noted that this study had limitations that included potential selection bias, information bias, and missing data.

Conclusions

- In this comparative retrospective study, the authors reported reductions in hospital LOS, mean time to wound closure, mean surgical debridements, and LOT for V.A.C. VERAFLO™ Therapy patients compared to V.A.C.® Therapy patients.
- Based on cost savings from fewer OR visits for surgical debridements and reduced length of therapy for V.A.C. VERAFLO™ Therapy patients, the authors recommended "additional prospective, controlled studies . . . to further assess the comparative cost effectiveness of each treatment."

Disclosures

Dr. Gabriel is a consultant for KCI, Inc. (San Antonio, TX). The other authors have no financial disclosures.

* NPWTi-d system daily estimated cost—$194.80 (assumes daily cost of NPWT unit of $63.25, 0.8 canisters daily at $42.49 each, 3 medium dressings at $115 each/average hospital stay, and one cassette at $55 each; solution cost excluded. NPWT daily estimated cost—$106.08 (assumes daily cost of NPWT unit of $63.25, 3 medium dressings per week with mix of silver foam dressings (79%) at $71.96 each and black foam (21%) at $50.40 each, 0.3 canisters per day at $42.49 each).

References:
1. Granick M, Boykin J, Gamelli R, Schultz G, Tenenhaus M. Toward a common language: surgical wound bed preparation and debridement. Wound Repair Regen 2006;14:S1-S10.

NOTE: Healthcare costs are in US dollars and are based on the US market. Actual savings will vary based on country-specific healthcare systems and on individual facility costs, protocol and patients.

NOTE: Specific indications, contraindications, warnings, precautions and safety information exist for these products and therapies. Please consult a physician and product instructions for use prior to application. This material is intended for healthcare professionals.

3M + KCI™