

# Negative Pressure Wound Therapy with Instillation Use with a High Concentration pure Hypochlorous Acid (pHA)-Based Cleanser: New Multidisciplinary Consensus Guidelines and Recommendations

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## INTRODUCTION

- Pure HOCl-based cleansers\* (pHA cleansers) are evidence based, guidelines support its use.
- Clinical usage for decades demonstrate excellent safety and germ removal/desloughing efficacy
- Negative Pressure Wound Therapy with instillation and dwell\*\* (NPWTi-d) allows periodic exposure (instillation), residence time and then evacuation of the spent wound cleanser from the wound.
- pHA + NPWTi-d has been reported in several studies to expediate wound conversion to a positive state (e.g. ready for wound coverage, closure, or secondary healing) in complex wounds in a variety of wound locations.
- Large comparative retrospective or prospective studies examining the clinical benefits of this pHA + NPWTi-d would be valuable.
- A consensus panel was established to gather the collective wisdom in this area in the interim.

## METHODS

- Panel members selected by the lead author (PJK)
- The panel comprised of 15- members: Plastic Surgery (N=6), Nursing/ Nurse Practitioner (N=4), Trauma/General Surgery (2), Podiatric Surgery (N=1), Vascular Surgery (N=1), Infectious Disease (N=1).
- Experts were chosen from the USA, Canada and France.
- Rural/Urban/Academic institutions.
- The panel met substantially in person, with oral/email follow ups.
- A written survey of 10 declarative statements were distributed to the panel through electronic correspondence
- Binary answers were sought, “agree” / “disagree” with the statement as well as a section for comments to each statement.

## DISCUSSION

- Independently, NPWTi-d and pHA have demonstrated benefit and synergies seem to exist.
- Although the Consensus Statement 7 indicates that the majority of expert panelists have not had issues with blockage causing alarms, there are anecdotal reports that instillation with pHA mechanically solubilizes a high volume of non-viable wound debris which can adherence to the foam dressing and negative pressure tubing and ports.
- The simplest resolution to this potential issue is to utilize the 2-TRAC pad set up.

## RESULTS

	Consensus Statement	Proportion and Percent (%) Agreement
1	Hypochlorous acid (HOCl, e.g. pHA) is the best option as an instillate solution for Negative Pressure Wound Therapy with Instillation (NPWTi-d).	13/14, 93%
2	pHA can have detrimental degradative effects on the foam dressings used for NPWTi-d.	0/14, 0%
3	There are the same indications and contraindications for the use of pHA and NPWTi-d when used independently or in combination.	12/14, 86%
4	Early initiation (at the time of initial contact in the care setting) rather than delayed initiation of pHA + NPWTi-d is recommended.	13/14, 93%
5	pHA + NPWTi-d should be used only in cases of heavy bioburden where complete surgical excisional debridement is not possible.	0/14, 0%
6	More rapid cycling (shorter dwell time and negative pressure time) of NPWTi-d is recommended when pHA is used.	3/14, 21%
7	pHA always requires a separate ingress or egress ports when used with NPWTi-d.	2/14, 14%
8	pHA is the preferred solution when the large-perforated (reticulated) foam dressing is not available.	5/14, 36%
9	pHA + NPWTi-d is safe when used in a wound that has deep exposed structures including deep fascia, ligament, tendon, capsule, cartilage and bone.	14/14, 100%
10	pHA + NPWTi-d provides more efficiency and effectiveness for wound bed preparation than if used independent of one another	14/14, 100%

## DISCUSSION CONT'D

- In which case, users may exploit gravity for easy evacuation, and assist with identifying the location to place the 2-TRAC pads.
- There are no uniquely different recommendations for the pump device settings
- The default preprogrammed factory settings suffice.
- Individual clinician experience and patient circumstance may dictate changes in pressure, negative pressure time, and/or solution dwell time.
- There is insufficient data to support “dose-response” recommendations.

## LIMITATIONS

- As with all expert consensus statements, the recommendations reflect panel members experiences.
- There are ingrained biases to each panel member governed by their training, experience, discipline, and interpretation of the literature.
- All panel members were active users of pHA + NPWTi-d and their support for therapeutic use was not surprising.

## CONCLUSION

- This was the largest and most diverse multidisciplinary panel assembled on the topic of pHA + NPWTi-d.
- Differences in agreement to the ten consensus statements were driven by individual preferences rather than safety or effectiveness
- Until more robust randomized clinical data is generated, this consensus statement can serve as a bridge of knowledge for the safe and effective use of pHA + NPWTi-d.

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