

A Treatment Cost Comparison of Two Mini Negative Pressure Wound Therapy Systems in a Burns and Plastics Department

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Introduction and Treatment Aim

Negative Pressure Wound Therapy (NPWT) is frequently used in burns and plastics to prepare the wound bed for grafting and to enhance skin graft and flap survival. Clinical papers report a 10% improvement in the rate of skin graft success when using NPWT in place of conventional dressings and NPWT should be considered, especially when the wound bed and grafting conditions seem less than ideal.¹

NPWT is known to accelerate healing, which is essential within this speciality to help minimise the risk of infection.

The Talley VENTURI® MiNO (Figure 1) was used for this evaluation. The MiNO is a new small, portable, lightweight (250 grams) NPWT unit with a replaceable 150ml capacity exudate canister.

Many of the small NPWT systems currently available are disposable, however the MiNO is re-usable and can be used on multiple patients. The benefit of this is that the cost of the pump spreads over the lifespan of the product which, in this case, is up to one or even two years. This results in a highly cost effective mini NPWT system.

The primary aim of this work was to compare the cost of using the MiNO NPWT system against an alternative disposable mini NPWT unit, whilst optimising clinical outcomes for the patient. Clinical data was also recorded to ensure that the wound continued to heal during the therapy. In addition to this, both clinicians' and patients' perspectives of the new product were captured.

Methods

The Burns and Plastics department at the Royal Preston Hospital wanted to reduce their spend on mini NPWT systems. A retrospective cost analysis within the department identified that five patients over a six month period had received the existing mini NPWT unit, using a single patient use, disposable pump.

Based on each of the five patients receiving two weeks of NPWT therapy, the total cost of using the existing disposable mini NPWT system was calculated at approximately £2,022. The projected cost for providing the same five patients with the Talley VENTURI® MiNO NPWT system was calculated at £615 (thereby saving £1,407 for this specific patient cohort).

The above cost saving is based on using a single MiNO NPWT pump for five different patients. Using the system for multiple patients over many months makes it highly cost effective.

In order to confirm the projected cost savings stated above and the clinical performance of this new re-usable mini NPWT system, a prospective product evaluation was undertaken on three patients. All three patients received foam based NPWT.



FIGURE 1.
VENTURI® MiNO
Negative Pressure
Wound Therapy
system

Results

Patient 1 presented with a wound to the left ankle following a fall. The MiNO was used to prepare the wound bed for skin grafting. After eight days the wound bed was granulating and ready for skin grafting.

Patient 2 presented with a surgical wound following a groin dissection. After a washout and debridement in theatre, a skin graft was applied and the MiNO was utilised to secure the graft. After five days the NPWT was discontinued as there was 100% take of the graft.

Patient 3 had a wound to the right leg, following a thigh lift. This required debridement and drainage of infection/collection. NPWT was applied using the MiNO, but discontinued after three days due to excessive exudate levels.

The comparative treatment costs for re-usable vs. disposable mini NPWT are reported in Table 1 below.

The MiNO system was reported as being easy to use and dressing application was also reported as being very simple. Due to the size and portability of the pump, patients found the therapy acceptable and unobtrusive.

TABLE 1.
Cost data for wound dressings

	Treatment cost associated with the Talley VENTURI® MiNO system (using a foam wound filler)			Comparative cost for a foam based DISPOSABLE mini-NPWT system		
	Patient 1	Patient 2	Patient 3	Patient 1	Patient 2	Patient 3
Cost of pump	£300	-	-	£350	£350	£350
Cost / dressing change	£17.50 (includes canister)	£17.50 (includes canister)	£17.50 (includes canister)	£19.75	£19.75	£19.75
No. dressing changes required	3	1	1	3	1	1
Total dressing cost	£17.50 x 3 = £52.50	£17.50	£17.50	£19.75 x 3 = £59.25	£19.75	£19.75
TOTAL	£300 + £52.50 = £352.50	£17.50	£17.50	£350 + £59.25 = £409.25	£350 + £19.75 = £369.75	£350 + £19.75 = £369.75
Tx Total for 3 patients	£352.50 + £17.50 + £17.50 = £387.50			£409.25 + £369.75 + £369.75 = £1,148.75		

Discussion / Conclusion

Clinical outcomes for the Talley VENTURI® MiNO NPWT system were in line with current expectation for mini NPWT systems and support current literature for the use of NPWT within this speciality.

In addition the MiNO delivered significant cost savings when compared against a similar mini NPWT system with a disposable pump. With an increasing focus on cost effective wound care within the NHS, there is a clear need for products which demonstrate both clinical and cost effectiveness.

The Burns and Plastics department at the Royal Preston Hospital have now adopted the Talley MiNO into clinical practice.

References

1. Petkar KS, Dhanraj P, Kingsly PM, Sreekar H, Lakshmanarao A, Lamba S, et al. A prospective randomized controlled trial comparing negative pressure dressing and conventional dressing methods on split-thickness skin grafts in burned patients. Burns 2011;37(6):925-929.



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