Poster Presentation: VENTURI® MiNO NPWT System

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Negative Pressure Wound Therapy Treatment Costs – A Comparative Evaluation

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Introduction and Treatment Aim

Negative Pressure Wound Therapy (NPWT) is used to treat many different wound aetiologies and is known to accelerate healing. Despite this, clinicians are often questioned regarding the funding of this therapy.

Due to an ageing population, it is predicted that the number of patients with wounds will continue to rise. This increase in wound prevalence is due to the conditions associated with an aging population that can influence the development of wounds, for example, diabetes and obesity. [1]

With this in mind, the importance of current NPWT devices being both cost and clinically effective is crucial.

The Tissue Viability service at Wrightington, Wigan and Leigh NHS Foundation Trust were asked to reduce spend on NPWT across three hospitals sites. As a result of this, alternative mini NPWT systems were assessed to determine if any potential cost savings could be realised.

The primary aim of this work was to undertake an economic evaluation on the use of a new re-usable mini NPWT system, compared with a similar mini NPWT system which uses a disposable (single patient use) pump with a limited life span.

In addition to this, wound progression was reported as a secondary outcome in order to confirm the clinical performance of the system. The portability of the pump, patient acceptance and ease of use were also captured during the evaluation process.

Methods

A new mini NPWT system, the Talley VENTURI® MiNO (Figure 1) with a re-usable pump, which on paper offers sizeable cost savings, was identified by the Tissue Viability Team. An evaluation was undertaken to identify if this system delivered these savings in practice.

The MiNO NPWT system consists of a small portable lightweight unit, which allows the patient to retain their independence throughout the therapy. In addition to this, the pump has no limited period of use. It can be used on multiple successive patients, offering a potential financial benefit to clinicians.

The MiNO NPWT system costs £300 (weekly dressing pack and canister included). The weekly cost thereafter is either £35 (slim foam) or £40 (gauze or standard foam). The disposable NPWT system currently used by the Trust provides seven days of therapy and uses an absorbent dressing with a high moisture vapour transmission rate. The system is canister free and costs between £120 and £140 per week.

Two patients were chosen to receive the VENTURI® MiNO NPWT system. Patient 1 presented with an abdominal wound, following surgery for peritonitis. The primary clinical aim was debridement and to promote growth of granulation tissue. Eight days of NPWT was delivered. Patient 2 presented with a four week history of a category III pressure ulcer to the sacrum, with the primary aim of promoting granulation tissue. After seven days the NPWT was discontinued due to the patient becoming confused. Both patients had two dressing changes using the MiNO NPWT system.

FIGURE 1.
VENTURI® MiNO Negative Pressure Wound Therapy system

Results

The primary clinical aim was achieved in both patients. Figure 2 clearly illustrates the debridement and promotion of granulation tissue in patient 1 after eight days of gauze based MiNO NPWT. In addition to the clinical outcomes being achieved, both staff and patients found the MiNO NPWT system easy to use. Staff identified the ease of dressing application and removal and the patient found the small size of the pump easy to manage and not cumbersome.

Treatment costs for disposable vs. reusable (MiNO) NPWT systems are reported in Table 1 below.

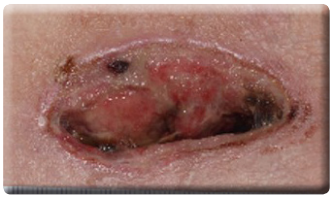

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FIGURE 2.
Before, during and after treatment of a wound with MiNO NPWT

TABLE 1.
Cost data for wound dressings

	COST OF DISPOSABLE MINI NPWT SYSTEM		COST OF VENTURI® MINO NPWT SYSTEM	
	Patient 1	Patient 2	Patient 1	Patient 2
Weekly cost of NPWT	£140	£140	£300*	£40*
Total cost for two patients	£140 + £140 = **£280**		£300 + £40 = **£340**	

* The difference in 'weekly' cost of the MiNO NPWT system between Patient 1 and Patient 2 is due to the initial purchase price of the NPWT pump at £300 for Patient 1. Since the pump is specifically designed to be re-used, ALL subsequent patients treated with the MiNO system will only incur a weekly dressing cost (£35 for slim foam; £40 for gauze or standard foam).

Discussion / Conclusion

Although the cost data reported in Table 1 fails to demonstrate a cost saving for the re-usable NPWT system, it is evident that the 'break-even' point for 'reusable' vs. 'disposable' mini NPWT systems is approximately three weeks of treatment and significant cost savings will be achieved when the VENTURI® MiNO NPWT system is used beyond three weeks, as the only cost incurred by the reusable system is that of the weekly dressing packs.

The ability to reuse the MiNO NPWT pump for multiple patients makes it a highly cost effective treatment option. Taking a longer term view, the estimated annual cost of using the current (disposable) NPWT system on a weekly basis would be £7,280, compared to £2,340 using the new VENTURI® MiNO (reusable) NPWT system, demonstrating a cost saving of £4,940.

From a clinical perspective the wound progression when using the MiNO NPWT system was in line with expectation and its performance in terms of expediting the wound healing process is similar to that experienced with the disposable NPWT system.

Like all areas of the NHS, Tissue Viability departments are continually required to work in a more cost effective manner. The ability to re-use the MiNO NPWT pump for multiple patients has the potential to deliver significant cost savings in NPWT treatment without compromising on wound progress or patient outcomes. The VENTURI® MiNO NPWT system is currently in the process of being adopted into clinical practice in Wrightington, Wigan and Leigh NHS Foundation Trust.

References

1. Gottrup F, Henneburg E, Trangbaek R, Baekmark N, Zollner, K and Sorensen, J. Point prevalence of wounds and cost impact in the acute and community setting in Denmark. Journal of Wound Care 2013;22(8):413-422.

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