Poster Presentation: VENTURI® MiNO NPWT System

EUROPEAN WOUND MANAGEMENT ASSOCIATION CONFERENCE, LONDON 2015

Initial experiences of using a new, lightweight, highly portable NPWT system to expedite wound healing in two primary care patients

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Introduction and Treatment Aim

The primary aim of this work was to expedite wound healing in primary care using the VENTURI® MiNO, a new, lightweight Negative Pressure Wound Therapy (NPWT) system from Talley (see Figure 1). Two primary care patients with long standing wounds were identified as the type of patients that would benefit from the use of a small, highly portable NPWT system. Individual patient details are as follows;

Patient 1: A 46-year old male paraplegic with a moderately exudating left Ischial Tuberosity category 3 pressure ulcer of four months duration. Prior to beginning NPWT the wound measured 3.5cm x 2.5cm x 0.5cm. This gave area and volume measurements of 8.75cm^2 and 4.38cm^3 respectively. In the four months prior to the application of NPWT the wound was dressed with a gel and covered with a foam dressing. Dressings were changed four times per week. See Table 1 for data relating to dressing costs. The treatment aim for this patient was to expedite healing.

Patient 2: A 54-year old diabetic female with a lightly exudating post-op stump wound after right below knee amputation. The wound was six months duration and prior to beginning NPWT it measured 1.0cm x 1.0cm x 1.5cm, equivalent to a wound area of 1.0cm^2 and a volume of 1.5cm^3. Tissue type at wound bed was 90% granulation; 10% slough. Prior to the application of NPWT the wound was dressed with a hydrofiber and covered with a foam adhesive dressing. Dressings were changed three times per week. See Table 1 for data relating to dressing costs. The treatment aim for this patient was to encourage granulation tissue in the wound bed and prevent further surgical intervention.

Methods

Both patients were treated at home and each patient received continuous NPWT at-80mmHg throughout their treatment period. The NPWT wound dressing consisted of a gauze based wound filler which was covered with an occlusive film dressing and attached to the pump unit via a portal drain. District nurses performed two dressing changes per week throughout the NPWT treatment periods.

FIGURE 1.
VENTURI® MiNO Negative Pressure Wound Therapy system

TABLE 1.
Cost data for wound dressings

	PATIENT 1		PATIENT 2	
	Standard dressings (4 changes per week over a 4 month Tx period)	NPWT (2 changes per week over 2.5 weeks)	Standard dressings (3 changes per week over a 6 month Tx period)	NPWT (2 changes per week over 2 weeks)
Consumables cost / dressing change	£4.30	£22.50*	£4.01	£22.50*
Labour costs / dressing change**	£14.30	£14.30	£14.30	£14.30
Total cost / dressing change	£18.60	£36.80	£18.31	£36.80
Weekly cost (consumables + labour)	£74.40	£73.60	£54.93	£73.60
Total cost for Tx duration	£1,265	£184	£1,428	£147

*includes cost of VENTURI® MiNO NPWT pump spread over 52 weeks

**for the purposes of this costing exercise labour costs are given for 1 hour of a top Band 5 nurse

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Results / Discussion

Patient 1: The new NPWT system was used for seventeen days. During the treatment period there was a marked improvement in the wound (see Figure 2). The wound bed had become level with the surrounding epithelium (thereby reducing wound volume to 0) and the wound area had reduced by 70% to an area of 2.63cm^2 (wound length 1.75cm; width 1.5cm). At the end of NPWT the patient continued with conventional dressings however the frequency of dressing changes had reduced to two per week, resulting in significant savings in nursing time and associated costs.

FIGURE 2.
Wound progress during NPWT treatment of Patient 1

Patient 2: NPWT was used for fourteen days. During this time the wound measurements remained the same however the sloughy tissue had been replaced by granulation tissue across 100% of the wound bed. Full epithelialisation was achieved five days after NPWT stopped. See Figure 3 for wound photos.

The patient made the following statement regarding her treatment with the new NPWT pump:

'It was a small compact pump which was very beneficial in my circumstances as I live alone and use a wheelchair to get around. Because of the size of the pump it was unobtrusive and I found this helpful as I was still able to go out and about while continuing my treatment without drawing any unwanted attention to myself'.

In terms of feedback from the nursing staff the NPWT system evaluated very well in both cases and overall product assessment was very positive in terms of both its clinical performance and ease of use.

The weekly costs associated with wound management were similar when comparing the new NPWT system with conventional wound dressings (see Table 1). Patients' wounds responded rapidly to the new NPWT system and made significant progress over a short timeframe, enabling both patients to be stepped down from NPWT once their clinical outcomes had been achieved (after seventeen days and fourteen days respectively). The use of NPWT for these patients was highly cost effective, totalling £331, which compared favourably with the cost of using conventional dressings, which totalled £2,693.

FIGURE 3.
Wound progress during NPWT treatment of Patient 2

Conclusion

These cases illustrate the potential cost and clinical benefits that a small, easy to use, highly portable true NPWT system can offer patients in primary care. A key advantage is the ability to provide patients with the very latest in advanced wound care therapy without it intruding into their daily lives.

With the ongoing financial pressures on healthcare systems in the UK and Europe there is a clear need to provide highly cost effective, complex wound care in the home care setting. With ever more advanced wound care taking place in primary care settings products that are intuitive, simple to use, clinically effective and have a minimal impact on the patients daily activities are likely to become an increasingly important part of the tissue viability toolkit in the coming years. In addition, expediting the healing process for complex wounds can be highly cost effective when considering overall treatment costs.

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