

Evaluation of Two Unique Compression Bandage Systems (CoFlex TLC with Malodour Control, CoFlex TLC Lite & CoFlex UBZ with Zinc) on Five Patients with a Variety of Lower Limb Conditions

Lead Contact & Lead Author - Glenn Smith - Clinical Nurse Specialist for Nutrition and Tissue Viability
 Nutrition and Tissue Viability Service Office, St. Mary's Hospital, Parkhurst Road
 Newport, Isle of Wight, PO30 5TG. Tel: +44 (0) 1983 552154

Co-Author - Elaine Gibson - Tissue Viability CNS
 East Kent University Hospital NHS Foundation Trust. Clinical Manager Aspen Medical Europe Ltd, Thornhill Road
 Redditch, Worcestershire B98 9NL. Tel: +44 (0)7584 390803 E.Mail: elaine.gibson@aspenmedicaleurope.com

Introduction

The main purpose of this study was to investigate the effect of two new short stretch compression systems in five patients with common chronic lower limb conditions. Chronic leg ulcers are the most common type of lower limb ulceration with 70% caused by chronic venous hypertension, Burrows et al (2006). An appropriate level of compression is proven to heal chronic venous leg ulcers². Two patients in this study were treated for cellulitis, one requiring hospital admission. Both patients had the zinc impregnated foam bandages (UBZ) applied successfully. A third patient had mixed aetiology ulcer and was unable to tolerate a modified 4 layer compression and was treated successfully with CoFlex TLC Lite. During this study the UK experienced some of the hottest temperatures in the last 30 years. This had an impact on the further two patients in this study who noted an increase in malodour associated with their leg ulcers. CoFlex TLC foam comfort layer is impregnated with Cyclodextrin (a naturally based oligosaccharide) known to reduce malodour.

Method

Five patients were recruited 3 male 2 females with a mean age of 63.8 (Fig. 1), from two different centers, one in Kent and the other in the Isle of Wight. All patients had clinical evaluation forms completed for up to 4 weeks or until healed. Patients were asked to record their experience in a diary incorporating a "numerical and faces" pain rating scale. Both clinician's and patients were asked to complete the evaluation regarding wear time and slippage. The short stretch systems were applied according to clinical need following a comprehensive leg ulcer assessment which included. Underlying disease such as chronic venous insufficiency, diabetes and peripheral vascular disease. Doppler assessment with ankle brachial pressure index was recorded in line with current trust protocols.

Case Study 1 - Patient 1

This 58 year old gentleman was recently discharged from hospital 2nd April having been treated for recurrent cellulitis following a trauma injury whilst working on his farm in April 2013. He had just completed a 5 day course of intravenous antibiotic therapy. The discharged letter discussed acute lipodermatosclerosis. Past Medical History Mr R has been an insulin dependent diabetic for 31 years blood glucose ranged between 19-14 He had an intraocular haemorrhage and was partially sighted. He had bilateral nail avulsions for previous infections. Was discharged home on Penicillin V 500mg TDS, and Flucloxacillin 500mg QDS.

On examination the right lower shin was painful, swollen with associated mild erythema. Mr R described the pain as a burning sensation and described this as a "scald". With a numerical rating of 7. Doppler examination ABPI above 1.1 bilaterally.

Mr R commenced a new Zinc impregnated foam two layer compression bandages (CoFlex UBZ®) He Stated that "feels cool and comfortable to wear" He was reviewed within 24 hours following first application as he was a high risk patient of peripheral vascular disease. The initial swelling had reduced and the limb was redressed after three days. It was important to Mr R could continue to wear his wellingtons as he has livestock to care for. The two layer is provided with a stockinet, he found that this enabled him to get into his wellingtons and stopped the sheets from sticking to his leg at night. During his care some of the hottest temperatures were recorded in Kent. Despite this Mr R continued to wear the compression.

By week three Mr R had completely healed. During the acute phase of cellulitis Mr R could not tolerate any compression. All diabetic patients remain a high risk to infection and slow healing. Doppler examination can be misleading. Careful monitoring of his lower limb was vitally important. He did not complete the patient diary after the second day as he was too busy on the farm. The short stretch bandage system combined with systemic antibiotic therapy enabled Mr R to continue manage his farm reduce the oedema and most importantly keep his leg cool even in hot weather.

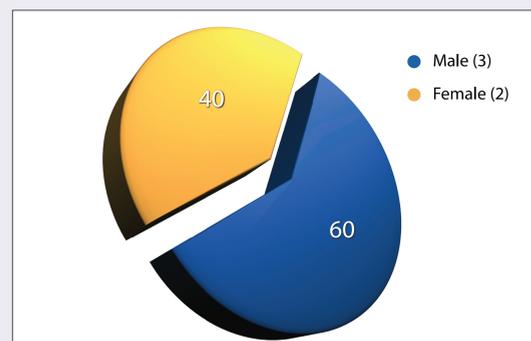


Fig. 1 Patient Gender

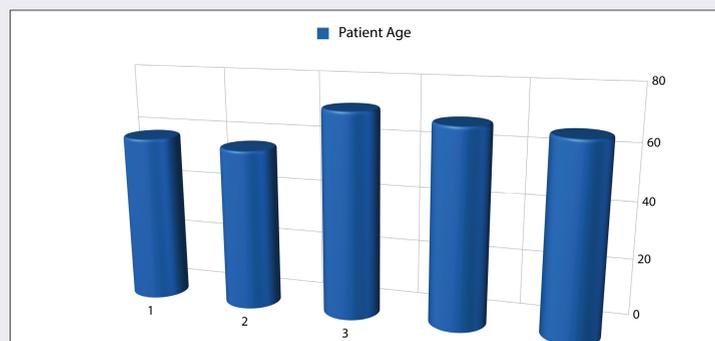


Fig. 2 Patients Mean Age 63 Years

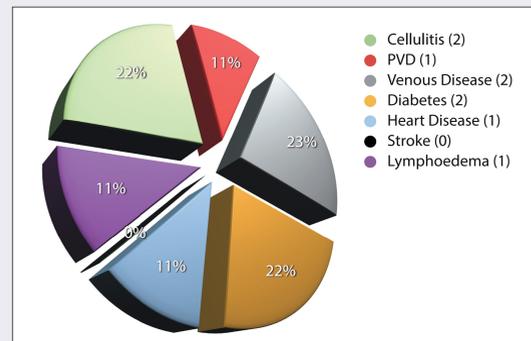


Fig. 3 Underlying Disease

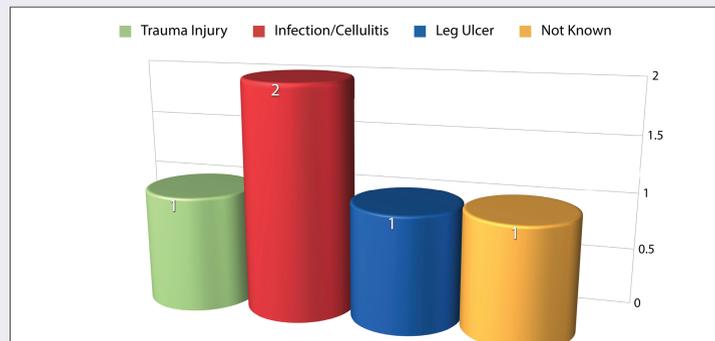


Fig. 4 Cause of Skin Damage



Case Study 2 - Patient 3

71 year old gentleman complained of swelling associated with "blueness" and painful ulceration of his lower right limb which has gradually got worse over the last 3 months. This is associated with dull, aching pain particularly at the end of the day. He has a past medical history of chronic mixed aetiology leg ulcers (for which he underwent revascularisation approximately 4 years ago) Endocarditis 1986. He continues to work as a local butcher being on his feet most of the day. His ankle brachial pressure index 0.8 left and 0.73 on the right. Both lower limbs were warm to touch with high green malodourous exudate and visible dermal stripping, Hemosiderin staining bilaterally with peripheral pitting oedema. Thread veins were visible on the right malleoli. The ulcer was very painful with a numerical rating of 8 at the start of this study. The ulcer measured of 7.3cm x 6cm.

Pseudomonas aeruginosa was confirmed by wound swab, sorbsan silver® was applied as primary dressing, supported CoFlex TLC light applied. CoFlex TLC® foam comfort layer is impregnated with Cyclodextrin (a naturally based oligosaccharide) known to reduce malodour. The light version is designed for patients with ankle brachial pressure index between >0.5mmhg - <0.8mmhg.

The wound healing was rapid with a reduction in both malodour, exudate, oedema, pain. This patient went on to heal within 4 weeks of compression therapy.



Results

All five patients documented a reduction in oedema and pain during this evaluation. Establishing the cause of the ulcer; one patient sustained a trauma injury on a farm. 2 patients had cellulitis. One (diabetic) patient, following two episodes of cellulitis, required systemic antibiotics and close observations of glucose levels. During the acute phase the patient was hospitalised and was unable to tolerate any compression. Following discharge he was able to tolerate compression at home for two weeks after which his ulcer had healed. The second patient had no active ulceration and the short stretch bandages were applied to soothe the itching which had been disturbing his sleep pattern. This patient also stated that "in comparison with other systems, the zinc bandages cooled his legs, and the addition of the pop sock (included with CoFlex bandage systems) made such a difference to his bandages not sticking to his clothing or bedclothes". Two patient's leg ulcers were heavily contaminated with pseudomonas aeruginosa (confirmed on wound swabs) and required primary dressings of calcium alginate dressing with silver. The Cyclodextrin impregnated bandage (TLC) was documented by both the clinicians and the patients to reduce malodour. The final case study was a patient who had a mixed aetiology ulcer that had undergone revascularisation. He continued to have a problem with lower limb oedema, the TLC system proved to be safe and effective enabling the patient to wear shoes for the first time in six months.

Discussion

The new short stretch two layer compression system was well evaluated in both performance and quality of life outcomes in the five patients in this study. One patient who had dermatitis following an admission for cellulitis stated that the foam impregnated dressing was the "Rolls Royce" of bandages as it soothed the limb. The stocking that is supplied with the bandages prevented the bandages sticking to bed clothes which improved sleep patterns. The limitation of this study was that there were only a five cases documented. The product will continue to be evaluated across both Kent and the Isle of Wight. The early finding our encouraging that when used appropriately the short stretch system appears to reduce malodour, calm the effects on the skin following bouts of cellulitis (even in a diabetic patient) and improve the quality of life by reducing oedema and pain.

References

- Burrows C, Miller R, Townsend D et al (2006) Best practice recommendations for the prevention and treatment of venous leg ulcers: update 2006. Wound Care Canada 4(1).
- World Union of Wound Healing Societies (WUWHS). Principles of best practice: Compression in venous leg ulcers. A consensus document. London: MEP Ltd, 2008.
- Acton C et al (2006) Are short-stretch bandages better than long-stretch? Wounds UK, Vol 2, No 2pp90-92
- Charles H (2004) Does leg ulcer treatment improve patients' quality of life. J Wound Care 13(6): 209-13