

Observational study on compression bandaging systems - effects on healing, patient comfort, nurse benefits and costs.

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Introduction

With leg ulceration still presenting many challenges to hospital and community nurses, there is considerable pressure to improve healing rates, employ safe practice, consider patient preference and deliver value for money. Additionally, keeping nurses updated in new treatments and providing training to ensure competency requires skill on behalf of the specialist nurses who make decisions on the choice of treatment.

I am the link leg ulcer nurse responsible for running a dedicated community leg ulcer clinic at Clydebank Health Centre in Glasgow which has been established for twelve years. We are constantly aiming to improve the quality of patient care and treatment available for leg ulcer management and feel that quality of life and effective healing are prime concerns when considering treatment options.

Background

In the past, the four layer elastic compression system has been the predominant treatment of leg ulcer management. There has now been an introduction of an alternative system of compression bandaging using Actico® cohesive short stretch bandages which act in a very different way from the four layer system. Short stretch is characterised by its ability to maintain its position when the muscle expands. The force of the calf pump muscle exerting pressure against the rigid bandage allows the deep veins to fill and blood to be forced back towards the heart; therefore resting pressure is lower than working pressure (Hawkins, 2001)

A multi-centred clinical trial comparing Actico® cohesive short stretch versus four layer bandages demonstrated similar healing rates in leg ulceration (Franks et al 2001). There is an abundance of literature to support its efficacy, safety and patient preference.

Aim of this study

To give a clear understanding of the rationale for the study, the observations and results gleaned from the process, and the resulting changes in practice by the team to improve patient care.

During a recent observational study carried out in the clinic, it was apparent that the patients were more concordant with the short stretch system compared to the four layer elastic system. Healing rates improved and the system was more cost effective.

Abstract

With leg ulceration still presenting many challenges to hospital and community nurses, there is considerable pressure to improve healing rates, employ safe practice, consider patient preference and deliver value for money. Additionally, keeping nurses updated in new treatments and providing training to ensure competency requires skill on behalf of the specialist nurses who make decisions on the choice of treatment.

Study method:

A retrospective review of practice was conducted to identify patient conditions and the systems used. Healing rates, costs of each system, patient and nurse comments were recorded.

The patients were asked to complete a questionnaire on the treatment they received.

28 patients selected, 10 male, 18 female, ranging from 43 – 90 years old. 10 venous, 6 arterial, 5 mixed, and 7 were awaiting Doppler assessment.

Bandage systems used

11 patients had cohesive short stretch (Actico®)
2 four layer bandages. The remaining patients were awaiting Doppler assessment or deemed unsuitable for compression therapy.

Whilst acknowledging 11 patients had short stretch (Actico®) and 2 people had four layer bandaging, it is worth noting that this clinic had previously only been using four layer, but as an experienced nurse/practitioner this small observation study has supported my decision to change practice within the clinic.

Results

Healing rates were similar in both groups, but patients and nurse preference for Actico® bandages were reported. Some of the main advantages of the short stretch bandages were:

- All patients found this system more comfortable to wear at rest – especially in bed at night (Prytherch 2005).
- Only two layers, so less bulky than four, making it easier to apply footwear.

Nurse and patient benefits included:

- Quicker and easier to apply.
- More chance of patient concordance as easier and more comfortable to wear (Wilson 2005)
- Can be used on mixed aetiology ulcers (Ruff 2001)
- Decreased incidence of over compression as bandage applied at full stretch
- Can be used on patients with limited mobility (Franks 2001)
- Cost effective.
- Improved healing rates.
- Low resting pressures and effective working pressures (Prytherch 2005)
- Reduces oedema and re-shapes oedematous legs (picture)
- Cooler

Cost comparison

The costs of nurse time for training and bandage application, and early healing were not included in this observation.

Unit cost of two layer system (Actico® plus Flexiban®) - £3.39 to £6.34*

Unit cost of four layer system - £8.35 to £10.38*

* Costs are dependent upon limb size.

Discussion

Taking these observations into account, the short stretch system is becoming the preferred choice of bandage for both the patient and practitioner. Patients now have a choice of elastic and non elastic compression bandaging which should help improve concordance and ultimately healing rates.

Conclusion

Actico® bandages were easy to apply and to teach, were used safely and effectively in mixed aetiology ulceration and were cost effective. In addition, patients were more concordant with this system.

Case study 1

Patient A is a 61 year old female who was referred by her GP with an ulcer measuring 4 x 4 cm. The injury was obtained by a stiletto heel whilst dancing! She treated this ulcer herself for 4 weeks with inappropriate dressings, and it quickly became infected requiring GP attention as it was painful and exuding. GP prescribed antibiotics and referred her to the leg ulcer clinic.

The ulcer was deep, sloughy with a marked odour, clinical signs of infection were evident, patient was very distressed, feeling guilty as she had not sought medical attention sooner. Doppler and holistic assessment was carried out, ABPI right 1.07, ABPI left 1.04, this patient was suitable to commence on short stretch bandaging. Appropriate wound management was carried out and Actico® short stretch bandaging was applied. The ulcer healed within 5 weeks.

Case study 2

Patient C is a 44 year old lady who has morbid obesity and type 2 diabetes with limited mobility. She presented at the clinic with chronic oedema in both legs and was unable to wear shoes, she also had chronic ulceration with excessive exudate in both legs. Due to this she was suffering from severe depression and her quality of life was severely impaired. Doppler and holistic assessment carried out at clinic. ABPI 0.7 right and 0.72 left, mixed aetiology result. She was commenced on appropriate wound management for the ulceration and Actico® short stretch bandaging to both legs. Within 3 weeks, the oedema was dramatically reduced enabling her to wear shoes, mobility and morale was greatly improved. The ulcers healed within 7 weeks and her quality of life dramatically improved.

Case study 3

Patient B is a 69 year old lady who has morbid obesity and poor mobility. She presented at the clinic with 2 ulcerations on her right leg. One measured 4 x 3 cms, the other 2 x 1cm. Ulcers were sloughy, painful, exuding and infection was present. Doppler and holistic assessment were performed at the clinic. ABPI right 1.26, ABPI left leg was 1.19. Appropriate wound management was carried out using Actico® short stretch bandaging. The ulcers healed within 7 weeks.

References

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Lymphovenous dependent oedema.



First layer of Actico® being applied.



Second layer of Actico® being applied.