

Juxta-Fit™ compression garments in lymphoedema management

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The management of patients with lymphoedema and chronic oedema, within a community setting poses a multitude of difficulties, particularly when the patient does not meet the referral criteria for access to specialist lymphoedema clinics. This debilitating condition has significant psychological, physical and social implications for patients and their families. The limited availability of compression garments on FP10 can lead to inadequate treatment regimens that do not address full leg oedema. The lack of training and education and increasing demands on community nurses' time creates difficulty in meeting patients' needs.

Compression therapy is one of the cornerstones of lymphoedema management, as it aims to reduce limb size by removing oedema, as part of the treatment process and prevent oedema re-formation within maintenance therapy. The need for easy-to-use, patient-friendly, comfortable garments are of paramount importance when bandage systems and/or compression hosiery is not a viable option, and nursing time and lack of education are a reality. This article explores the use of Juxta-Fit™ garments within a community setting, when traditional treatments did not provide a feasible option in the management of two patients with chronic lymphoedema.

Compression garments

Custom-made compression garments are widely used as a maintenance treatment to prevent re-formation of oedema in patients with lymphoedema and chronic oedema (Damstra, 2010). Several studies have shown a significant reduction in oedema as a result of compression garments (Badger et al, 2004), as compression will aid the breakdown of fibrosed tissue, improve venous return, assist with the movement of oedema from the affected area and increase lymphatic re-absorption (Foldi et al, 2005).

Compression garments can be divided into two main categories: circular knit and flat knit. The categories are determined by the method in which the fabric is manufactured (Clarke et al, 2006). The flat and circular knit categories can be divided further into sub-groups relating to hosiery standards and classification systems. Circular knit hosiery is recommended for patients with minimal or no limb distortion and can be obtained as an 'off the shelf' ready-to-wear garment (Osborne, 2009).

The material is knitted on a cylinder and has no seam. Custom-made flat-knit garments should be used when the patient has a degree of limb distortion (Lymphoedema Framework 2006). The material is thicker and firmer than circular knit and is made as a flat piece, shaped according to measurements and joined by a seam to form the garment.

British standard BS 6612:1985 circular knit compression hosiery in the 'off the shelf' range and 'made to measure' have been the only types of garment available within the community until recently. The patient may experience rolling, twisting or tourniquet effect from this type of garment as the fabric is not stiff enough to effectively control the oedema resulting in pressure damage and ulceration (Lymphoedema Framework 2006). In May 2012 flat-knit 'made-to-measure' compression hosiery was made available (by medi UK) on drug tariff.

The flat-knit hosiery is recommended for the maintenance of lymphoedema and chronic oedema as the thickness and firmness of the material prevents re-formation of oedema without twisting, rolling and tourniquet effect so reducing the risk of ulceration and recurrence of cellulitis (Lymphoedema Framework 2006).

ABSTRACT

This article explores the use of Juxta-fit™ compression garments in the management of lymphoedema patients within a community setting. Compression garments form the foundation of lymphoedema and chronic oedema management and maintenance. The lack of specialist services determines that patients with non-cancer related lymphoedema diagnosis are often managed by community nurses with no specialist knowledge. This innovative adjustable compression device is easy to use and patient friendly, it conforms to limb shape and delivers constant graduated pressure with a similar action to short stretch bandages. The adjustable interlocking bands allow the patient to tighten the garment throughout the day without removal. The Juxta-Fit™ can be used independently or in conjunction with compression hosiery, the lower leg garment is now available on FP10. This device has provided a cost effective essential tool for community nurses in the management of such patients, educational requirements are minimal and impact on nursing time reduced.

KEY WORDS

Lymphoedema ♦ Juxta-Fit ♦ Cost-effective ♦ Innovative ♦ Compression

Table 1. Juxta-Fit™ range, indication for use and availability via prescription (FP10)

Style	Indication for use	Availability on FP10
Juxta-fit™ lower leg	Suitable for patients with lower leg oedema with no significant arterial disease.	Available on FP10 in 5 sizes; small, medium, large, X large and XX large and 2 lengths; petite or standard.
Knee and thigh piece	Suitable for patients with upper leg oedema with no significant arterial disease. Can be used in conjunction with the Juxta –Fit lower leg garment.	Not available on FP10, can be purchased direct from medi UK as a made to measure item.
Shelf strap	Used to provide additional stiffness to overhanging distorted shaped areas of the leg. To be used in conjunction with Juxta-Fit lower leg and upper leg thigh and knee piece.	Not available on FP10, can be bought separately directly from medi UK. They are also available with made to measure Juxta-Fit garments.
Ankle foot wrap	Suitable for patients with pedal oedema.	Available on FP10 in 3 sizes; small, medium and large and 2 styles; closed or open heel
Cures system	Suitable for patients with leg ulceration with no significant arterial disease.	Not available on FP10, can be purchased directly from medi UK.

Multi-layer inelastic short-stretch bandages are recognised as an effective element of lymphoedema therapy as they reduce oedema volume (Badger et al, 2000). Short-stretch bandaging provides a semi-rigid covering around the limb creating high working pressures and low resting pressures. High working pressures aid venous return and encourages lymphatic drainage whilst low working pressures promote concordance as the patient does not experience a constant



Figure 1: Juxta-Fit™

tightness from the bandages (Moffat, 2005)). This type of bandage system also assists in re-shaping the limb, reducing skin changes, aids in the break down of fibrosed tissue and eliminating lymphorrhoea. Recommendations suggest daily application for the first 7 days of treatment (Lymphoedma Framework, 2006).

Multi-layer elastic bandage systems are effective in oedema reduction however the movement in fluid can result in oedema re-formation within non-compressed areas of the limb and other parts of the body (Foldi et al, 2005) and, if untreated, may cause increased pain, immobility, ulceration and skin changes.

Intermittent pneumatic compression is a specialist treatment regime performed within a lymphoedema clinic. IPC may be used to manage patients experiencing venous ulceration with immobility and where leg elevation is not possible (Vowden, 2001). The garment is electrically operated and is designed to inflate and deflate cyclically delivering a level of pressure for a set length of time to reduce oedema. This system is considered to decrease capillary filtration and lymph development.

Juxta-Fit™

The Juxta-Fit™ range from CircAid® (available from medi UK) is an innovative compression device aimed to manage patients with lymphoedema / chronic oedema with no significant arterial disease. It can be used as a standalone garment or in conjunction with compression garments and works in a similar way to short stretch bandages. The design allows the patient or carer to apply sustained compression 24 hours a day through a succession of interlocking bands ('Juxta-lock') that can be loosened or tightened without removing the device. The varying band widths ensure the garment contours limb shape guaranteeing therapeutic levels of pressure, maintaining limb reduction and oedema re-formation. The garment can be worn 24 hours a day and loosened at night to promote comfort; it can be removed for bathing and skin-care regimes and is machine washable (Figure 1).

There are various garment styles available in the UK allowing tailor-made, easy-to-use devices designed to meet the needs of the lymphoedema/chronic oedema patient. Table 1 shows the range of styles available within the UK for lower and upper leg lymphoedema.

Patients have involvement in their care, promoting independence and concordance with treatment. Daily clinic visits are not required for bandage re-application, reducing transport costs, stress and allows the patient to continue with daily life at home and at work. Unlike bandage systems the risk of slippage and the heat, weight and bulkiness do not pose a problem (Linnit and Hunt, 2011). The Juxta-Fit™ provides an alternative to compression hosiery, which for some patients can be very difficult to apply particularly when manual dexterity is poor and may provide a long term treatment option for such circumstances.

The demands on community nurses time and resources are ever increasing, however the Juxta-Fit™ now available

Table 2: Limb size reduction in case study patients

Case study subject and date of treatment	Leg	Circumference: 5 cm above ankle bone (A)	Circumference: 15 cm above ankle bone (B)	Circumference: 25 cm above ankle bone (C)
Mrs X : March 2012	Left	47 cm	63 cm	67.5 cm
	Right	45 cm	65 cm	67 cm
Mrs X: May 2012	Left	38.5 cm	45.5 cm	47 cm
Mrs X: June 2012	Left	32 cm	43 cm	47 cm
Mrs Y: May 2012	Left	43 cm	50 cm	65 cm
	Right	40 cm	50 cm	64 cm
Mrs Y: June 2012	Left	36 cm	48 cm	62 cm
	Right	37 cm	47 cm	60 cm

on FP10 provides a viable solution to chronic oedema and lymphoedema management. It reduces nursing visits and time, education is minimal and appropriate, effective treatment can be implemented improving patient outcomes.

It could be argued that within the current climate of the NHS and pressure to reduce prescribing costs, garments such as the Juxta-Fit™ with a price tag of £125 on FP10 could be hard to justify. However, when calculated against the time spent by district nurses performing daily visits at a cost of £55 per visit, following one week under the care of the community staff, the cost already totals £385 (Posnett and Franks, 2008). This does not account for the

daily use of other compression systems such as inelastic or elastic bandage systems. Furthermore, patients suffering with lymphoedema or chronic oedema are predisposed to developing cellulitis and leg ulcers; in some cases admission to hospital is required for intravenous antibiotic therapy costing £2,300 per admission (Hardy, 2010).

The review of articles where Juxta-Fit™ or CircAid® products have been used to manage lymphoedema, support the enhancement of quality of life amongst their users (Linnitt and Hunt 2011; Lund 2000).

Case study one

Mrs X is a 65-year-old female with a five year history of chronic bilateral full-leg lymphoedema. The cause of the condition is unknown, past medical history does not include cancer treatments, or surgery,

The patient was referred to the community tissue viability service by the district nurses, as there no access to lymphoedema services. Mrs X had been experiencing recurring episodes of leg ulceration and cellulitis resulting in a general deterioration. Over the past 5 years Mrs X had experienced four episodes of leg ulceration, 2 –3 episodes per year of cellulitis and 1 admission to hospital for intravenous antibiotics within the past six months.

On assessment bilateral full leg oedema was noted, non-pitting at the lower and upper region and soft pitting pedal oedema. Significant skin changes were apparent with papillomatosis and lymphorrhoea. Mobility had significantly reduced causing Mrs X to become housebound. Measurements were taken from both legs (see Table 2 and Figure 2).

Initially, Mrs X did not meet the requirements for an ‘off the shelf’ Juxta-Fit™ lower leg garment as she exceeded the size range for the XX large. Therefore, a made-to-measure Juxta-Fit™ lower leg garment, thigh, knee piece and foot wrap with open heel were ordered. Specialist funding was obtained in order to purchase the garments, the overall costs equated to £1000 for one full leg garment, a decision was made to treat one leg at a time.



Figure 2: Prior to the Juxta-Fit™

Treatment was commenced on the left leg and a review following six weeks of therapy showed that the limb size had reduced significantly, and non-pitting oedema was noted from foot to thigh (Figure 3). The made-to-measure garment no longer fitted the left leg and an 'off-the-shelf' Juxta-Fit™ lower leg garment was prescribed, the made to measure garment was transferred to the right leg (Figure 4). The following month, limb size had reduced again, therefore flat knit, made to measure, thigh-length hosiery was applied.

Mrs X is able to go out as her mobility has increased and psychological well-being has improved. The Juxta-Fit™ garment was effective in reducing limb volume and improved limb shape which enabled the application of compression hosiery.

Case study two

Mrs Y was a 55 year old female with bi-lateral full leg oedema, referred by the Walk in Centre (WIC). Mrs Y reports having 'swollen legs' since the age of 14 years old, unknown cause, and no history of surgery or illness to trigger the lymphoedema.

Mrs Y attended the walk in clinic, in desperation to seek treatment for her oedematous legs as they were increasing in size becoming more painful and extremely heavy. Mrs Y had experienced leg ulcers in the past and recurring cellulitis 2-3 times a year, a referral was made to the community tissue viability service.

An assessment of the patient's circulation was completed and compression therapy advocated. Applying conventional short-stretch bandages was not a treatment option as Mrs Y was main carer for her mother, therefore was unable to attend clinic on a regular basis. Soft-pitting oedema was noted toe to thigh; measurements were taken from the left and right leg (Table 2). An XX large, standard length Juxta-Fit™ for both legs and closed heel foot wraps were prescribed via FP10. As the oedema was soft and pitting to the thigh region a decision was made to apply lower leg garments only at this stage (Figure 5).

One month later Mrs Y was reviewed at home and her legs had reduced in size, and limb shape bi-laterally had improved (Figure 6). Mrs Y reported finding it difficult to readjust the foot wraps; we decided it would be more suitable for her to wear trainers to assist with oedema reduction to both feet.

It was negotiated Mrs Y would continue wearing the Juxta-Fit™ for another month (Figure 7).

At the eight week review both limbs were measured and remained the same size, as the limb distortion was minimal Mrs Y was measured for with bi-lateral made to measure, flat knit, thigh length with waist attachment, class 3 (RAL). The new plan of care involved monitoring the limb for distortion due to re-formation of oedema, if this occurred then the Juxta-fit™ would be applied over the compression hosiery.

The Juxta-Fit™ was an effective treatment for Mrs Y, her self esteem has grown; she is now out walking most



Figure 3. Six weeks following treatment with Juxta-Fit™



Figure 4. Juxta-Fit™ in place



Figure 5. Prior to Juxta-Fit™



Figure 6. Following 1 month of treatment with Juxta-Fit™

days and is much happier with her life. The freedom that the Juxta-Fit™ provided for this patient was incredible; it suited her lifestyle and didn't interfere with her role as main carer for her mother. The treatment significantly and effectively reduced limb volume and restored limb shape.

Conclusion and implications for practice

The Juxta-Fit™ garments have improved the quality of life for the patients in the case studies. The inelastic compression device works in a similar way to a short stretch bandage system, and has been effective treatment option for both patients featured within the article.

The garment allows readjustment of the interlocking bands without removal of the device, ensuring sustained compression is delivered to the affected limb. Patient empowerment and involvement in treatment has increased concordance in an area of nursing where concordance is often poor. The availability of five sizes, two lengths on FP10 has provided a valuable tool to effectively treat lymphoedema and chronic oedema patients within a community setting. The Juxta-Fit allowed the effective management of lymphoedema patients, without having a significant impact on nursing time or the need for intensive training. Limitations in availability of the thigh and knee piece on FP10, poses problems in obtaining



Figure 7: Juxta-Fit™, back view of the device

funding to buy such garments, making addressing upper leg oedema difficult.

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Badger CM, Peacock JL, Mortimer PS (2000) A randomized, controlled, parallel – group clinical trial comparing multilayer bandaging followed by hosiery versus hosiery alone in the treatment of patients with lymphedema of the limb. *Cancer* **88**(12): 2832-7

Clark M, Krimmel G (2006) Lymphoedema and the construction and classification of compression hosiery. In: *Lymphoedema Framework. Template for Practice: Compression hosiery in lymphodema*. MEP, London

Damstra RJ (Sept 2011) Prospective trial comparing the Juxta-Fit™ versus Trico Bandages in treating leg lymphoedema. Study presented at the 23rd International Congress of Lymphology, Malmom, Sweden

Foldi E, Junger M, Partsch H (2005) Focus Document: Lymphoedema bandaging in practice. In: *European Wound Management (EWMA)* MEP, London

Hardy D. (2010) Chronic oedema and associated complications. *Wounds UK*, **6**(4): 138-145

Linnit N, Hunt K. (2001) Use of Juxta-Fit™ To Reduce Oedema and Promote Self-Management. *Journal of Lymphoedema* **6**(2): 94-9

Lund E. (2000) Exploring the use of CirAid® legging in the management of lymphoedema. *Int J Palliat Nurs* **6**(8): 383-91

Lymphoedema Framework (2006) Best Practice For The Management Of Lymphoedema. In: *International Consensus*. MEP, London

Moffat CJ (2005) Focus Document: Lymphoedema bandaging in practice. In: *European Wound Management (EWMA)*. MEP, London

Osbourne, K (2009) How to use multilayer inelastic bandaging and compression garments. *Skills for Practice: Management of Chronic Oedema in the Community*. Wounds UK: 4-8.

Posnett J, Franks PJ (2008) The Burden of chronic wounds in the UK. *Nurs Times*; **104**(3): 44-5

Vowden K (2001) The use of intermittent pneumatic compression in venous ulceration. *Br J Nurs* **10**(8): 491-509

LEARNING POINTS

- ◆ The Juxta-Fit™ can be used independently or in conjunction with compression hosiery
- ◆ The adjustable interlocking bands allow the patient to tighten the garment throughout the day without removal
- ◆ The limited availability of compression garments on FP10 can lead to inadequate treatment regimens that do not address lymphoedema
- ◆ The Juxta-Fit™ garments have improved the quality of life for the patients presented within the case studies
- ◆ The garment has provided a valuable tool to effectively treat lymphoedema and chronic oedema patients within a community setting



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