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Managing Red Legs – Clinical Pathway

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Msc Lymphoedema

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BLS Trustee

Session will cover

* Differential Diagnosis
* Management
* Onward Referral

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Definition of Red Legs

It is well recognised that cellulitis is over diagnosed and over treated in patients with lower limb redness. A diagnosis of *Red Leg syndrome* should be considered when presented with a patient with bilateral lower limb redness, warmth, tenderness and swelling in the absence of systemic malaise.

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Introduction of a Red Leg Pathway

Comments received from GPs.

* *Great resource for community practitioner*
* *Helps to treat common but challenging problem*
* *Will reduce AB resistance*
* *I get calls to request AB when not even seen the pt*
* *HCPs don't know the other treatment options or don't implement them*
* *Pts expect tablets if had previously or been told they have cellulitis.*

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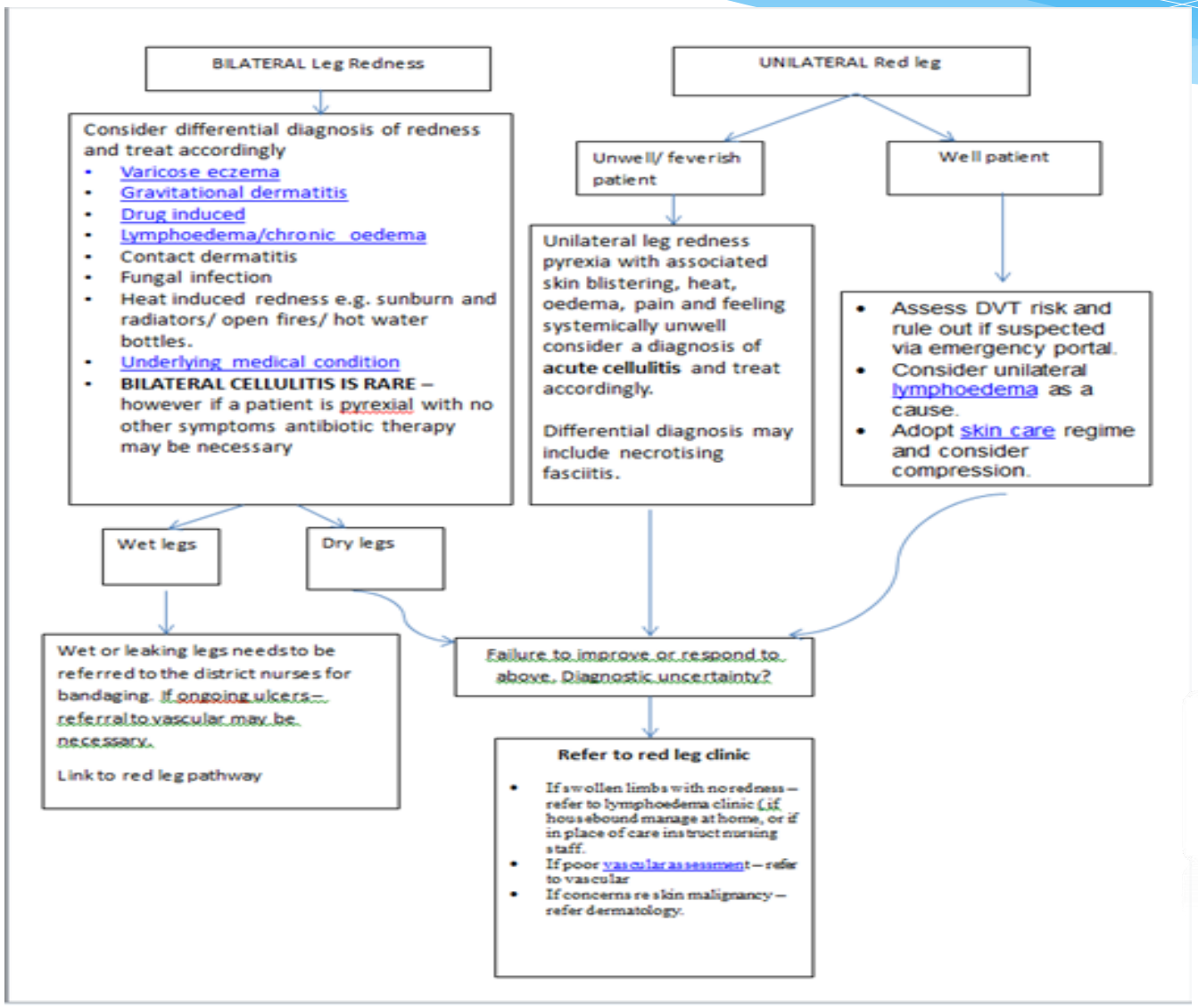

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Atopic eczema

Eczema (dermatitis)

Eczema is the term used for common inflammatory skin conditions characterised by weeping, itchy, red skin. The most common different types are:

Atopic eczema is a chronic but manageable skin condition associated with asthma and hay fever. It is often associated with allergies to dust mites, pollen, pets, etc. It is variable in severity, being well controlled at times but with the potential to flare up. The skin can become dry and cracked, inflamed, itchy and scratching leads to bleeding and thickening of the skin.

Varicose/gravitational/stasis eczema

Varicose eczema is caused by increased pressure in the leg veins which can cause fluid to leak into the surrounding tissues. The skin can be itchy, red, swollen, dry and scaly.

Contact dermatitis

Contact dermatitis is a type of eczema that occurs as a result of contact with a particular substance. It can lead to blisters and appears similar to other types of eczema, being itchy, red and dry. Scratching can result in broken skin, and infection can occur; hence the importance of using bland, fragrance-free emollients to reduce the risk of an allergic reaction. If suspected your GP should make a referral to a dermatologist for patch testing (various substances are applied to the skin to assess if there is any reaction).

Fungal infections

Fungal skin infections can be split into:

* Athlete's foot/tinea pedis - Athlete's foot is a contagious fungal infection causing itching to the feet—often between the toes or on the sole of the foot. The skin become dry, red, can blister and white, macerated (soggy) cracks are often seen between the toes. Inadequate drying between the toes after washing is a contributory factor, and the use of a longhandled cotton bud for drying this area can be helpful.

Fungal nail infection/tinea unguium

This usually starts at the edge of the nail and spreads inwards or down, the nail becomes thickened and discoloured. This can be difficult to distinguish visually from other nail conditions such as psoriasis of the nail and therefore nail clippings should always be taken and sent for analysis, ask your GP prior to commencing treatment.

Ringworm/tinea corporis

Ringworm is a highly contagious red, ring-shaped scaling rash that is usually itchy. Ringworm is not a worm and can be easily spread by contact between humans or with pets or farm animals.

Yeast

Candida albicans is a yeast that can directly cause skin problems (candidiasis), particularly in patients with diabetes or immunosuppression e.g. on chemotherapy. More frequently, yeasts are found in ‘sweat rashes’ (intertrigo) that are often seen in folds of the skin and are commonly seen in the groins, in deepened skin folds and wherever the skin presses together or rubs causing chafing. The skin becomes reddish brown and sore with trapped moisture, and this can lead to localised skin breakdown. If left untreated, fungal infections can lead to other more serious infections such as cellulitis.

Psoriasis

* Psoriasis is a common genetic, inflammatory skin condition which it is thought affects about 2% of the population.
* It presents with plaques of red, flaking skin covered with silvery scales. These are sometimes itchy or sore and can crack. Recognised triggers include skin trauma, throat infections and various medications, and many people report stress as an aggravating factor.
* The condition may be associated with joint damage (psoriatic arthritis) and although the condition cannot be cured, there are numerous treatments that can keep the condition controlled and a referral to a dermatologist should be made if symptoms persist.

Folliculitis

* Folliculitis is inflammation or infection of the hair follicles of the skin. The follicles swell into small pus filled, rounded pimples that look like a yellow-red spot. Folliculitis can occur under compression bandaging or compression hosiery due to a build-up of emollients and the compression itself. Emollients must always be washed off the skin daily before being reapplied and should be smoothed onto the skin in the direction of hair growth.

Skin Cancer

Skin cancer is one of the most common types of cancer and is increasing (Office for National Statistics). It can be categorised into:

* Non melanoma e.g. **Basal Cell Carcinoma (BCC)** - most common form of skin cancer (approx 75% of all skin cancers)
* **Squamous Cell Carcinoma (SCC)** - (20%)

Both BCC and SCC often appear as a flat, scaly patch on the skin or as a red, firm lump. 90% are successfully treated, usually with surgery and although may recur they are unlikely to spread.

* **Bowen's disease/SCC in situ** - early, treatable form of skin cancer which appears as a red, scaly patch which may or may not itch or bleed if scratched. It is often seen on the lower leg in females over the age of 65.
* **Malignant Melanoma** - a rare and serious type of cancer that begins in the skin and can spread to other organs in the body. The most common sign of melanoma is the appearance of a new mole or a change in an existing mole. This can happen anywhere on the body, but the back, legs, arms and face are most commonly affected. In most cases, melanomas have an irregular shape and more than one colour. They may also be larger than normal moles and can sometimes be itchy or bleed.
* **lymphangiosarcoma (Stewart-Treves)** - is a rare malignant tumour which occurs in long-standing cases of primary or secondary lymphoedema. It is most common in upper extremities but can be seen in the legs. The sarcoma first appears as a bruise where no trauma has occurred or there may be a tender skin nodule.

Lymphorrhoea

The Chronic Oedema
'Wet Leg' (Lymphorrhoea)
Pathway

May 2017

In most cases lymphorrhoea should not persist for any more that 48hours
The actual dressing used is of little importance
Initiate treatment even in absence of ABPI
1 x 2 day Wash (acidic lymph), dry and moisturise, superabsorbent dressing, stockinette, under cast wadding and inelastic bandages with compression on the foot and a toe cap/toe bandaging.
FULL/THERAPEUTIC COMPRESSION
PP in extreme cases 10x 10

Lymphoedema/Chronic oedema

Consider risk factors for lymphoedema and If lymphoedema is likely initiate skin care and consider compression garment prescription.

* • Cancer and its treatments – current or historical
* • Burns
* • Recurrent infection (cellulitis/filiariasis)
* • Thrombosis (current or historical)
* • Varicose veins and Ex IVDU
* • Leg ulcers
* • Obesity
* • Reduced mobility (dependent oedema)
* • Trauma
* Primary, congenital, genetic

Specific oedema induced skin changes

* Some skin conditions are a direct result of the swelling in the limbs and will improve as the swelling reduces by the wearing of compression (either bandages or stockings) and carrying out skincare. These include:

Hyperkeratosis

* Hyperkeratosis is an increased thickening of the outer skin layer which leads to thickened, scaly skin, hyperkeratosis is scaly patches which are mostly brown or grey and there may be cracks in the skin. It can be minimal or extensive, sometimes affecting the whole of the lower limb. The skin can have an offensive smell which is often due to underlying fungal infection which can lead to cellulitis and/or skin breakdown.
* NICE (2014) recommend the use of a monofilament debridement pad (Debrisoft, Activa) in the management of hyperkeratosis. This is a sterile, single-use pad made up of monofilament polyester fibres which are able to assist in the removal of the skin flakes. The All Wales Tissue Viability Nurse Forum (2014) produced All Wales Guidance for the: Management of Hyperkeratosis of the Lower Limb which includes a step by step guide for how to treat hyperkeratosis and how to use the monofilament pad which is available at: www.welshwoundnetwork.

Cont….

Papillomatosis.

Papillomas look like warts on the skin, and are caused by enlarged lymphatic vessels, surrounded

by hard tissue. These areas are often seen with hyperkeratosis and due to their surface vascular supply, they may bleed easily if knocked. Sometimes these areas are surgically shaved but can be slow to heal, many, even if they are large respond extremely well to compression hosiery or bandaging.

Lymphangiectasia/lymphangioma

* This is the term used to describe swollen, superficial (surface) lymph vessels in the skin, similar to a small blister (sometimes described as looking like frog spawn). It can occur as a result of congenital abnormality or after lymph glands have been blocked or injured due to trauma or surgery. If knocked clear or milky fluid can leak out, this increases the risk of infection. The areas affected can be painful and the use of compression therapy in the form of bandages or hosiery is often beneficial. Genital lymphangiectasia can often be confused with genital warts—any patient with lympahangiectasia affecting the genitalia (which may leak) should be referred to a lymphoedema specialist or dermatologist for assessment and treatment.

Lipodermatosclerosis

* Thought to be vascular complication but may turn out to be lymphatic
* Champagne bottle legs
* Extremely painful especially at the onset skin and tissue is shrinking, drawing in
* Inflamed, red, hot, tender and can be unilateral or bilateral.
* Can be associated haemosiderin staining/deposits.

Pharmacology of Red Legs

* Drug induced - Pregabalin/gabapentin
* Perform medication review and consider oedema inducing medications - Corticosteroids, Calcium channel blockers, NSAIDs, Parkinson's medication

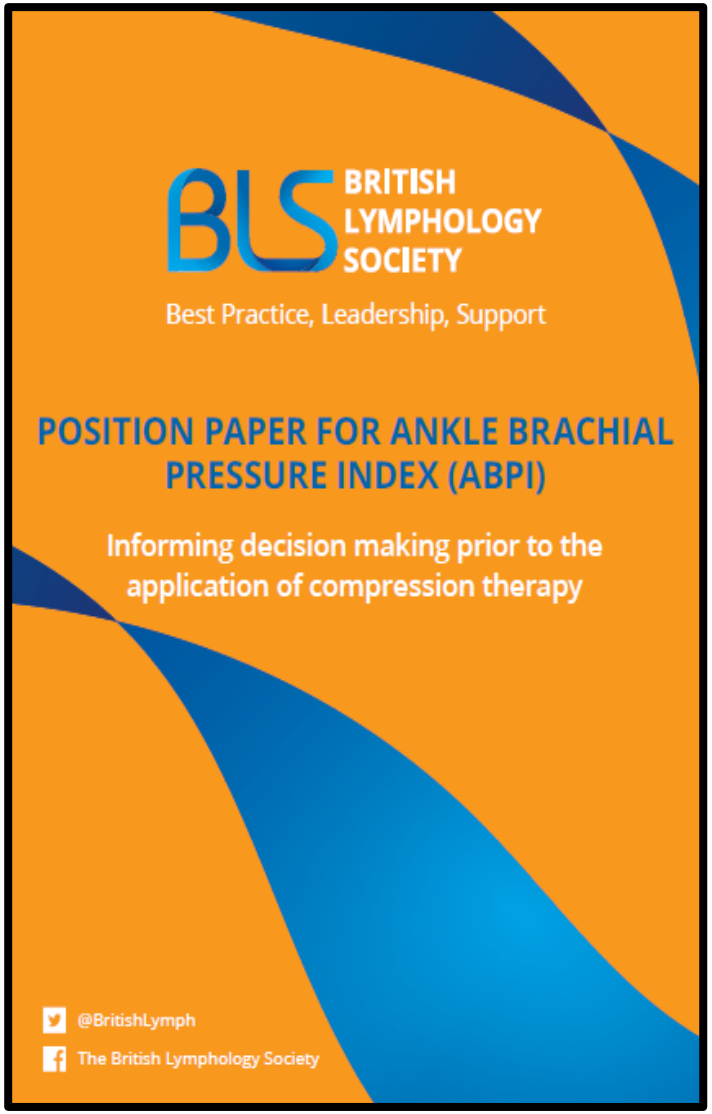
Early identification and timely management = good patient experience

Management of Red Legs

* Skincare
* Daily washing with soap substitute
* Dry thoroughly and gently especially in between the digits/skin folds
* Moisturise with a bland emollient – remember not one cream suits all, allergies/sensitivities.
* Use antipruritic cream if itchy and consider antihistamines
* Potent steroid e.g. Betnovate OINTMENT for 2 weeks the RD for up to 1 month (30 mins after moisturiser)

Exercise

* Walk as much as possible with/without aids
* Encourage activity e.g. pedal machine
* Chair based exercises up to 5+ times a day
* Get family/carers involved
* Chair yoga/pilates if on internet
* Positioning. Bed at night



An innovative position paper to provide guidance on clinical assessment rather than ABPI alone prior to the application of compression in lymphoedema/chronic oedema

Background

* Lymphoedema (chronic swelling) is an increasingly common problem. If you can see swelling there is lymphatic failure.
* Lymphoedema is progressive if not treated and predisposes people to wounds, recurrent cellulitis (and thus sepsis), skin changes, pain, and limited mobility.
* Delayed wound healing has been shown to cost the NHS around 5 billion pounds per annum (Guest et al 2015).
* A key component of treatment of chronic oedema / lymphoedema is the application of compression therapy. However, as a result of historical guidance stating that the patient must first have a satisfactory result for an Ankle Brachial Pressure Index (ABPI), practitioners are often fearful of applying full compression.
* It has long been recognised that obtaining ABPI in patients with lymphoedema is fraught with difficulties and readings are unreliable. Ignoring patient symptoms or delaying treatment while awaiting an ABPI, causes unnecessary delays in treatment and risks deterioration in the condition and possible harm to the patient.

Problem

* Todd et al (2006) showed that 46% of lymphoedema specialists felt that the ABPI was inaccurate in the presence of lower limb oedema.
* BLS recognises that in the field of lymphoedema there are numerous allied health care professionals for whom ABPI and wound care is not integral to their training.
* The Best Practice Document for the management of lymphoedema (2006) recommends measurement of ABPI prior to the use of compression
* Guest et al (2015) showed that in a patient group where assessment of peripheral perfusion is a recognised requirement, only 16% of all patients with a leg or foot ulcer had an ankle brachial pressure index recorded.
* Wounds UK Best Practice Statement for compression hosiery (second edition 2015) supports prompt application of compression of 14-17mmHg in the absence of ABPI to promote effective efficient wound healing.

The British Lymphology Society (BLS) would like to extend thanks to: Lymphoedema Network Northern Ireland (LNNI) and Tissue Viability Nurse Network (TVNN) in Northern Ireland for allowing BLS to share and use their Best Practice Statement to inform this BLS paper. We would also like to thanks all the other contributors and reviewers involved in the production.

ABPI

The ankle-brachial pressure index (ABPI) is the ratio of the blood pressure at the ankle to the blood pressure in the upper arm. Compared to the arm, lower blood pressure in the leg suggests blocked arteries due to peripheral artery disease (PAD).

ABPI is calculated by:

* dividing the systolic blood pressure at the ankle
* by the systolic blood pressure in the arm.

ABPI is only part of vascular lower limb assessment along with the patient's past medical history and current medication, and recording of symptoms and risk factors and a clinical examination being of paramount importance.

Factors which may affect ABPI include:

Diabetes	**Arteriosclerosis**
Renal disease	Cardiac arrhythmias e.g. Atrial Fibrillation
Rheumatoid arthritis, scleroderma and related disease	

Extrinsic factors can also affect ABPI including:

Inadequate preparation e.g. room temperature	**Inexperience of the operator**
Patient anxiety	Repeated inflation moving Doppler probe during the procedure
Incorrect positioning of the patient	Prolonged inflation of the cuff or re-inflation mid procedure
inappropriate gel	Releasing sphygmomanometer cuff too rapidly
incorrect size of Sphygmomanometer cuff	Excessive pressure on a vessel during the procedure
Wrong sized Doppler probe	Miscalculation of reading
Incorrect positioning of Doppler probe over vessel	

Vascular Assessment Tool

Name:

Hospital Number/Pt identification Number:

Date of Birth:

Date of assessment:

Medical history (diabetes, cardiac status, previous cancer, DVT, CVA, hypertension, hyperlipidaemia):

Surgical history (intervention for the arteries or veins):

Risk factors (smoking status):

Medications:

Signs and Symptoms	Yes	No
Muscle pain on mild exertion, such as walking, and is relieved by a short period of rest		
Sense of fatigue in the calf muscle which occurs during exercise		
Calf – Foot/great toe rest pain		
Inability to lie in bed and need to hang leg out/sleeping in chair		
Motor – sensory deficit		
Numbness/neuropathy		
Colour changes e.g. White, pale, dusky especially on elevation		
Skin changes e.g. toe ulceration		
Nails – hair changes e.g. atrophic nail changes		
Pulselessness		
Delayed capillary refill		
Temperature gradient in limb e.g. cooler at extremities?		

	Right				Left			
	P	M	B	T	P	M	B	T
Dorsalis Pedis or Anterior Tibial artery								
Posterior Tibial artery								
Other (e.g. peroneal artery)								

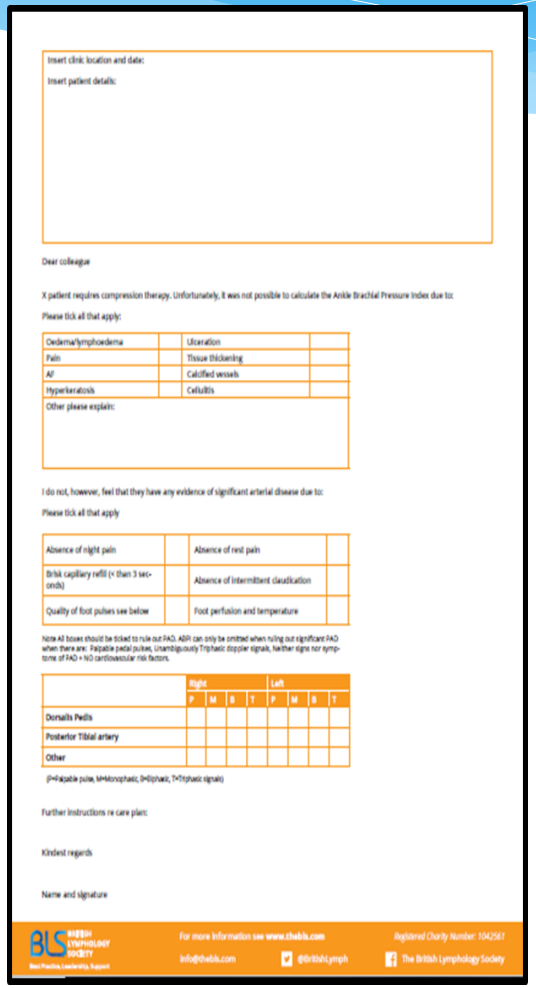
(P=Palpable pulse, M=Monophasic, B=Biphasic, T=Triphasic signals)

If you have concerns regarding the arterial status of the patient referral to a vascular clinic/department should be made.

Referral to vascular department required	yes	no
Referral completed	yes	Date:

Signed: ..... Date: .....

Date of review: .....



Insert clinic location and date:

Insert patient details:

Dear colleague

X patient requires compression therapy. Unfortunately, it was not possible to calculate the Ankle Brachial Pressure Index due to:

Please tick all that apply:

Oedema/lymphoedema		Ulceration	
Pain		Tissue thickening	
AF		Calcified vessels	
Hyperkeratosis		Cellulitis	
Other please explain:			

I do not, however, feel that they have any evidence of significant arterial disease due to:

Please tick all that apply

Absence of night pain		Absence of rest pain	
Brisk capillary refill (< than 3 seconds)		Absence of intermittent claudication	
Quality of foot pulses see below		Foot perfusion and temperature	

Note All boxes should be ticked to rule out PAD. ABPI can only be omitted when ruling out significant PAD when there are: Palpable pedal pulses, Unambiguously Triphasic doppler signals, Neither signs nor symptoms of PAD + NO cardiovascular risk factors.

	Right				Left			
	P	M	B	T	P	M	B	T
Dorsalis Pedis								
Posterior Tibial artery								
Other								

(P=Palpable pulse, M=Monophasic, B=Biphasic, T=Triphasic signals)

Further instructions re care plan:

Kindest regards

Name and signature

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A full vascular assessment should include:

Recent and past medical history (diabetes, cardiac status, AF, previous cancer, DVT, CVA, hypertension, hyperlipidaemia)

* Surgical history (interventions on the arteries or veins)
* Cardiovascular Risk factors (including smoking status)
* Medications

Symptoms:

* Intermittent claudication (can be described and experienced as: muscle pain on mild exertion - ache, foot pain/great toe pain, numbness or sense of fatigue classically in the calf muscle, which occurs during exercise, such as walking, and is relieved by a short period of rest)
* Chronic Ischaemic rest pain (usually described as night cramps with the Inability to lie in bed and need to hang leg out/sleeping in chair)
* Acute ischaemic pain
* Neuropathic or musculoskeletal pain

NB- time of onset and clinical progression (improvement or deterioration) should be recorded

Clinical examination:

* **Peripheral neurological status (e.g. motor and/or sensory deficit)**
* **Oedema (e.g. lipoedema, lymphoedema, pitting oedema)**
* **Peripheral pulse palpation (e.g. pulselessness)**
* Skin colour (e.g. pallor or mottling in acute ischaemia; rubor or duskiness in chronic ischaemia)
* Nails e.g. atrophic nail changes.
* Temperature (e.g. thermal gradient (cooler) at the extremities)
* Trophic skin changes (e.g. ulceration, pre-ulcerative lesions)
* Venous hypertension (varicosities, telangiectasia, eczema)
* Capillary refill (the time taken for colour to return to an external capillary bed after pressure is applied to cause blanching)
* Buerger's test (elevating both legs between 30-45 degrees for 2-3minutes: in the case of ischaemia, pallor and delayed venous refilling can be observed)

NB. All symptoms and signs in the affected limb should be compared to the contralateral limb for differential diagnosis

Doppler - waveforms

* Signals with hand held doppler – waveforms and phasic nature recorded:
* Triphasic (3 phases between heart beats)
* Biphasic (2 phases)
* Monophasic (1 phase)
* Sound/strength and pitch of waveforms e.g. whooshing sound in monophasic foot pulses

NB Interpretation of these results may be necessary in inexperienced practitioners.

Recommendation	Rationale
The arterial/vascular status of the legs of all patients with lower limb oedema or lymphoedema should be assessed	The presence of peripheral vascular disease may contraindicate compression therapy or necessitate a reduction in the level of therapy used (Lymphoedema Framework 2006)
Vascular status will be determined primarily through: 1. A detailed history of the presenting complaint including night time rest pain and intermittent claudication 2. A clinical examination of the feet and lower limbs	An ABPI is commonly thought to provide an objective measure of vessel patency by measuring the ratio systolic blood pressure at the ankle to that of the arm with a value of 1 – 1.4 deemed normal. Literature suggests that the value of an ABPI is limited in people with lymphoedema due to the presence of hyperkeratosis, tissue thickening and oedema. Some of these issues can be addressed through the use of a larger blood pressure cuff and a 4 or 5 MHz probe. However, some patients cannot tolerate this investigation and some readings will be inaccurate. In these situations practitioners need to rely on information obtained from a detailed history of the presenting complaint and the clinical examination. The handheld Doppler may enable the practitioner to hear and assess foot signals. If there is any doubt about the patient's peripheral arterial status, a vascular opinion should be sought.
Documentation and effective communication must be provided to all health care professionals involved in the ongoing management of the patient with lymphoedema: which demonstrates the clinical assessment and rationale for not completing an ABPI	Many practitioners are unaware of the limitations of a handheld Doppler in determining the arterial status of people with oedema or lymphoedema. They may therefore be reluctant to apply compression therapy without an ABPI as this investigation is cited as good practice in many documents, e.g. the National Institute for Clinical Excellence (NICE). It is therefore important to explain and record why it was not possible or necessary to carry out this investigation

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BLS is a proud coalition member of the "Legs Matter" campaign

BLS accept the following statements:

1. Routine ABPI measurements for patients who present with lymphoedema are not required in the absence of significant cardiovascular risk factors and clinical signs or symptoms of PAD (Peripheral Arterial Disease), provided the vascular status has been thoroughly assessed. If there are concerns in terms of reduced arterial flow, a referral for further vascular assessment and possible intervention should be pursued.

2. Documentation and effective communication must be provided to all health care professionals involved in the ongoing management of the patient with Lymphoedema: which demonstrates the clinical assessment and rationale for not completing an ABPI

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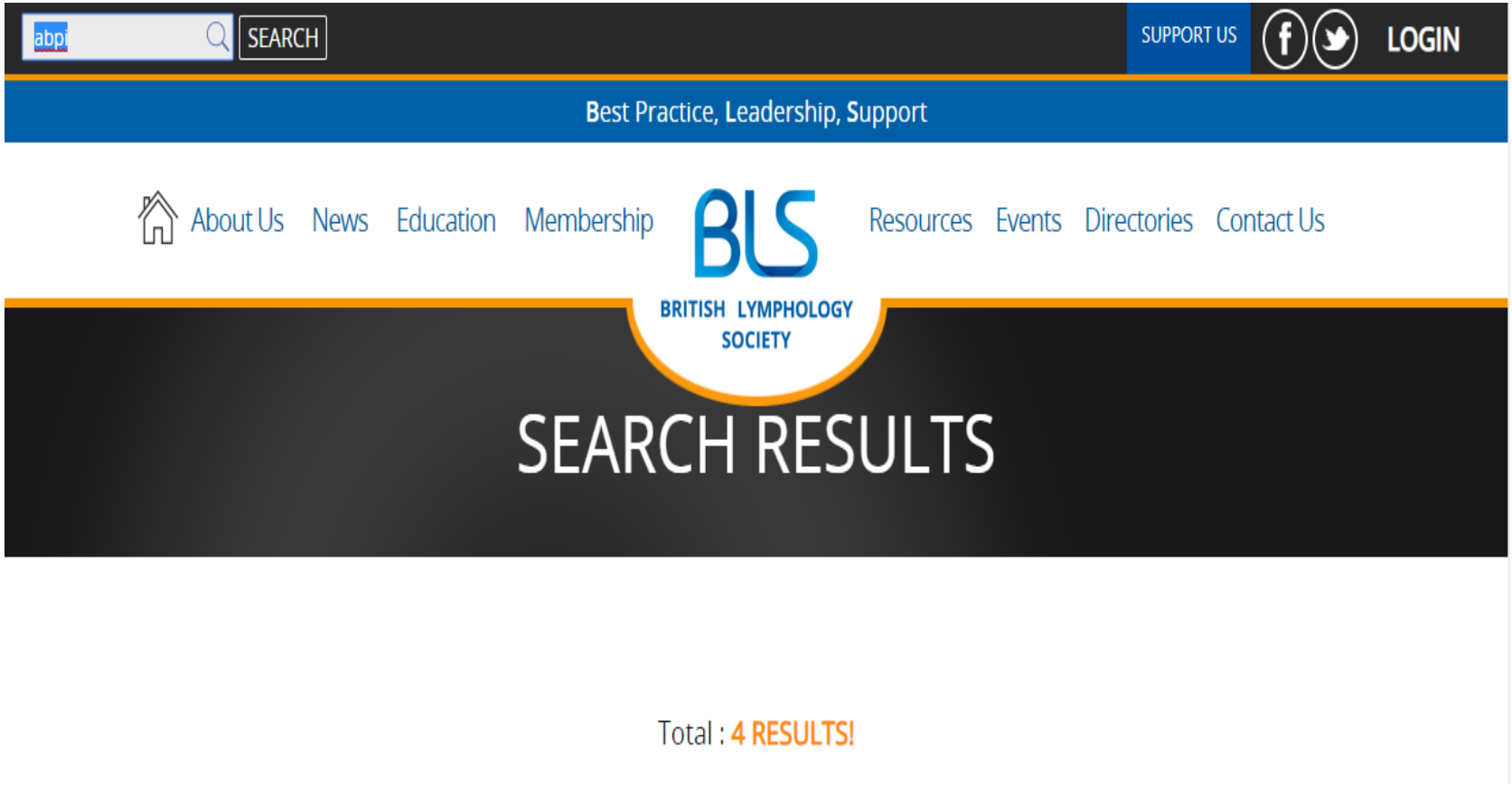


Conclusion

The creation of this position paper will empower practitioners in their clinical decision making, give potential benefit to thousands of patients and cut the cost incurred by ineffective treatments and subsequent complications within the field of Lymphoedema.

"Hailed as a game changer on social media"

"Ignoring patient symptoms or delaying treatment while awaiting an ABPI, that may be inaccurate, causes unnecessary delays in treatment and risks deterioration in the condition and possible harm to the patient" A. Hopkins Chief Exec Accelerate CIC (LM coalition member)

". . Anything that breaks down the barriers and improves the time frames for patients receiving appropriate treatment is fabulous" Dr L Atkin, Chair LM

Compression Hosiery

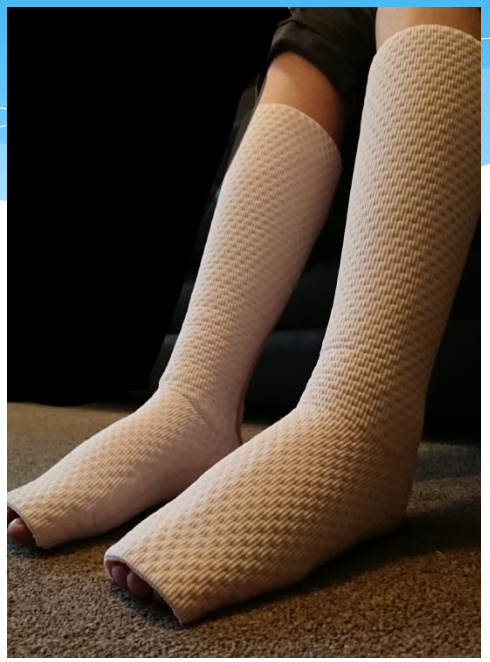
* Under layer usually required eg Skinnies, dermasilk, stockinette if resources do not allow (antimicrobial, calming, comforting, protective, ease application of compression) Can be used alone
* If low strength only required try liners, hybrid foot compression under wraps
* If no oedema class 1 for the management of red legs is usually enough, class 2 in lipodermatosclerosis may be indicated but may need to titrate
* If oedema may need flat knit custom fit – do not forget toes. Toe caps class 1 and 2 now available on fp10
* Can be with individual toes applied to the stocking, ankle socks only, anklet with low profile pads included, silk inserts e.g. behind knee, function zones at the knee/thigh, one leg tights, etc etc etc
* Colours are available in most garments.

Compression Hosiery Advances

* Made to measure now 5-7 days turnaround
* Climatherm
* Velcro/zips
* Application aids
* Huge volume products on fp10 – widely available
* Use of clever fabrics eg Lycra to improve fit
* Patterns fabrics, seamless options, some items can be tumble dried

Night-time Compression

* Traditionally in the UK worn day time only – poor results after LU blame hose
* Whitaker (2016) 89% of patients reported that their swelling increased when night-time compression was not used. The study concluded garments worn in bed overnight need to be comfortable, cool and easy to don
* Although patients can wear their standard issue hosiery there are some nigh time specific products - some available on FP10



Wraps

* Mimic MLLB but enable self care
* Some allow compression level to be set by the wearer
* There are foot pieces, calf, knee and thigh/upper limb
* Liners
* All fully washable
* Can be bulky but new generation wraps are emerging
* Mosti et al 2019 study confirms efficacy and costs saving

Multi Layered Lymphoedema Bandaging (MLLB)

* Stockinette
* Under cast wadding
* Foam chips, pitpaks, shaped foam
* Inelastic (cohesive) bandages using principles of LaPlaces law (increase pressure by width of bandage, number of layers, overlap, tension on the bandage and size of the limb)

Referral on

* Orthotics
* Symptoms VV
* Leg ulcer
* Dermatology
* Lo service
* Bariatric services
* Mental health services
* Safeguarding
* Biomechanics
* Exercise

Management - What can you do?

Pharmacological Management	Skincare	Compression	Exercise	Positioning	Healthy eating	Educate and Refer on as necessary
Gabapentin /pregabalin	Wash, dry	MLLB	Proactive	Bed at night	Healthy body weight	
Anti histamines	Debride	Wraps	Foot, leg exercises	Footstools	Diet if necessary	
Pain relief	Moisturise/ steroids	Hosiery – MTM, standard	Do in sitting	Comfort	Dietetics involvement	
	Observe		Walk more		Bariatric surgery	

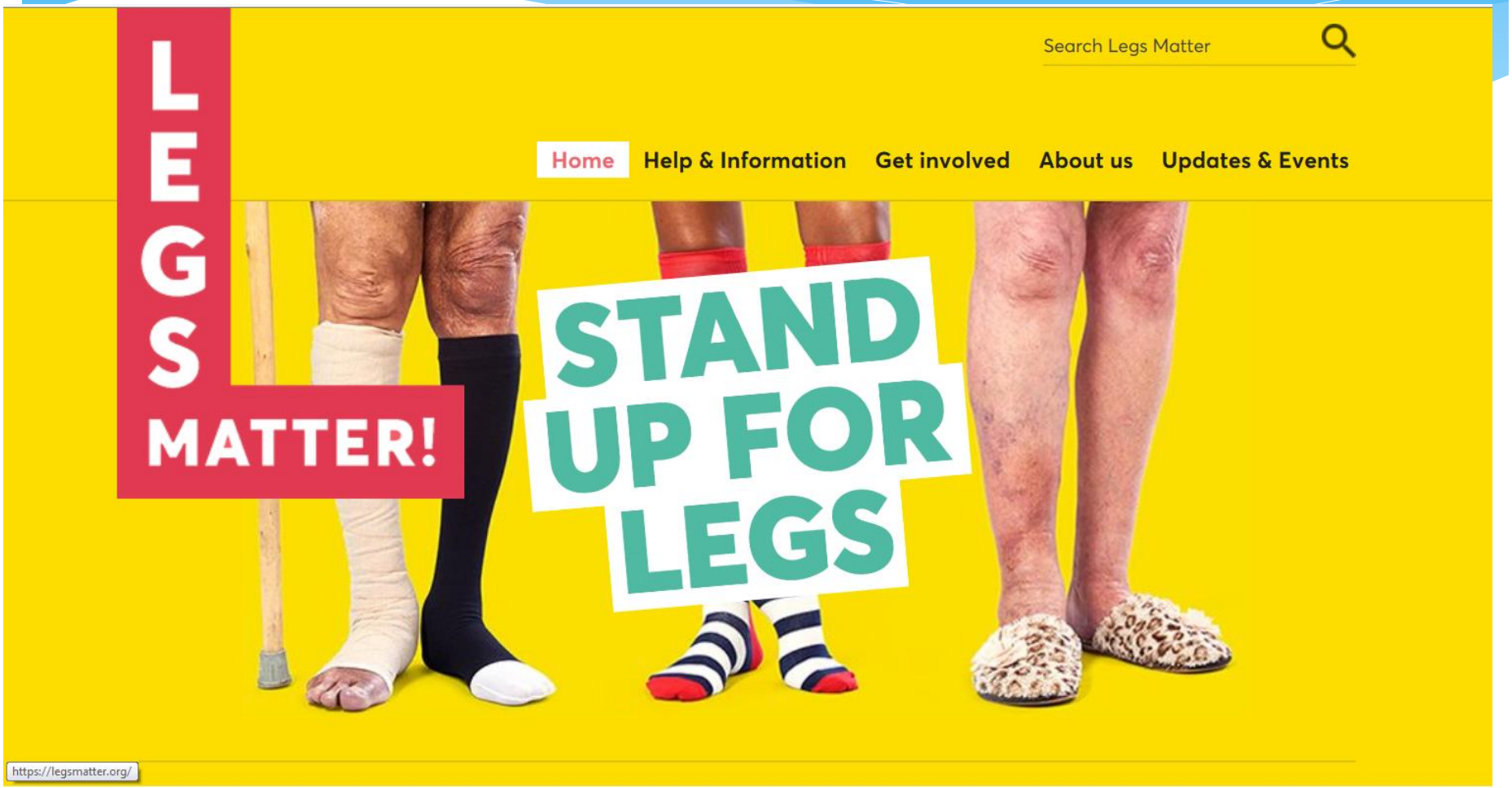
Evaluation/Outcome measures

* Best way to evaluate Red Legs is to ask the patient to take photos. Most have smart phones and it is a great way to compare changes over time, it even displays the date and time.
* If oedema present circumference measurements.
* Patient satisfaction and visual pain analogue

Conclusion

* Correct and timely diagnosis and implementation of a treatment plan for Red Legs aids the individual towards becoming an expert in their condition.
* Expectations are managed, aim is for long term management and prevention of further complications but may not be reduction to normal.

BLS is a proud coalition member of the Legs Matter Campaign



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Exercise campaign for launch Jan 2020