The South African Multi-Disciplinary Lymphoedema Position Statement

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Introduction

The South African position statement was compiled by members of the Lymphoedema Association of South Africa (LAOSA). This document serves to define lymphoedema and its management within a South African context and should be used as a quick reference when formulating policies and planning for health services across public and private sectors. Appropriate management of lymphoedema should be performed by healthcare providers (HCP) who are appropriately trained i.e. 135 hours for certification in the field of lymphoedema. There is a National Practice Register which is managed by LAOSA and is available on request (www.laosa.co.za). There are certified occupational therapists, physiotherapists, nurses, orthotists, doctors and AHPCSA professionals. Not all HCPs listed are contracted in by medical aids.

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Table I. Types of lymphoedema

Primary lymphoedema A result of a developmental deficiency in the anatomy of the lymphatic system		**Secondary lymphoedema** An acquired condition resulting in damage to or obstruction of normal lymphatic channels	
Broadly categorised:	**Congenital** – presents from birth up to 2 years	Several causes:	**Surgery –** e.g. the removal of lymph nodes often due to cancer, damage to vessels or pathways
	Lymphoedema praecox – develops from 2 to 35 years of age		**Radiation therapy** – resulting in damaged tissues
	Lymphoedema tarda – starts after the age of 35 years		**Recurrent infection –** cellulitis
			Filariasis – parasitic invasion of lymph nodes and vessels following a mosquito bite carrying the filariasis worm
			Other conditions – lipoedema**,** tumours, trauma, burns, sports injuries, venous disease and neurological paralysis

Table II. Stages of lymphoedema

	Stage 0 ***Latent stage***	**Stage 1** ***Reversible stage***	**Stage 2** ***Spontaneously irreversible stage***	**Stage 3** ***Lymphostatic elephantiasis***
Skin texture	"Normal" tissue consistency	Soft and spongy	May be firm	Increase in volume and size and significant changes to skin including fibrosis, papillomas, skin folds and hyperkeratosis
Pitting	Slight	Mild to moderate	None or pitting when pressure applied	None or pitting when pressure applied
Effect of elevation on oedema	Completely reduced	Marked improvement or complete reduction	No reduction	No reduction

What is lymphoedema?

Lymphoedema is an abnormal, chronic swelling of part/s of the body caused by a collection of lymphatic fluid (including water and proteins) in the tissues below the skin.[1,2] It occurs when there is a dysfunction in the lymphatic system. Lymphoedema is most commonly seen in one or both arms or legs, but may present in the face, body and genitals.[1,2,3]

It is a life-long, progressive condition, which cannot be cured, however can be managed - early intervention is optimal. It is for this reason that lymphoedema should be considered as a Prescribed Minimum Benefit (PMB).

There are two types of lymphoedema based on the causes (Table I).

Stages of lymphoedema can be described as in Table II.

The management of lymphoedema

A holistic approach to managing lymphoedema addresses all stages of management including assessment, diagnosis, treatment (acute and maintenance), psychosocial support, nutritional counselling, palliative care and risk reduction through education.[3,4]

International best practice guidelines recommend complete decongestive therapy (CDT) to manage lymphoedema.[3,4] There are a number of possible treatments[1-13] for lymphoedema, many of which can be used together. Early identification of risk factors and patient education by HCPs is important to prevent worsening of the condition and prompts appropriate referrals to specialists.

Assessment

A thorough and accurate review of the patient's past medical history, familial history, relevant incidents (trauma, injuries, etc.), signs/symptoms, social/lifestyle history and nutritional habits must be assessed.[5,9] A standardised method of recording this information is crucial to be able to use this information in the future for research purposes as there is a great need to obtain South African lymphoedema epidemiology statistics.

Diagnosis (Table III)

A number of early diagnostic tests are available to establish diagnoses, investigate co-existing conditions or exclude other pathologies.[1-4,9]

The following differential diagnoses need to be excluded: deep vein thrombosis (DVT), post-surgical trauma, congestive cardiac failure, chronic venous insufficiency and chronic renal failure.

Outcome indicators

Circumferential measurements are recorded upon assessment and discharge to determine the reduction achieved in the affected area during therapy. Other outcome indicators such as volume, participation in activities of daily living (ADLs), quality of life (QOL) surveys, subjective report and photography for comparison in the ongoing management are recommended.

Treatment

The most effective management of any condition, including lymphoedema, is to raise awareness and educate on lymphoedema risk-reducing factors. The gold standard for treatment of lymphoedema is complete decongestive therapy (CDT) and consists of manual lymph drainage (MLD), compression therapy (includes multi-layered lymphoedema bandaging (MLLB) and compression garments), home care, skin care and exercise. Phases of treatment are referred to as the initial (intensive) phase I and maintenance phase II.[1-4,6-7,9-13]

Table III. Diagnosis

Clinical diagnosis Often occurs prior to investigative tests	**Investigative diagnosis**
Examine: • Stage of oedema • Stage of pitting • Positive Stemmer sign • Skin integrity (fibrosis, colour, dermatitis, papillomas, hyperkeratosis, lymphorrhoea) • Circumferential or volume measurements • Limb shape (distortions) • Pain	Lymphoedema specific tests include: • Lymphoscintigraphy for formal diagnosis Other: • Ultrasound • Duplex Doppler (exclude DVT) • Filarial antigen card tests • Genetic testing • Lymphangiography • Indo-cyanine green (ICG) lymphography • CT or MRI Scans

Risk reduction

Risk reduction[1-4,7] and early intervention are important as high-risk patients are at lifelong risk of developing lymphoedema. High-risk patients include oncology patients who have had surgery or radiation to the lymph nodes, sustained trauma injuries, been diagnosed with a DVT, have recurrent cellulitis or diagnosed with a family history of lymphoedema.

Some methods of risk reduction of the affected limb besides meticulous skin care include:

- No drawing blood, vaccinations, acupuncture or taking blood pressure on the at-risk limb(s)
- Avoiding high impact sports, carrying heavy items or prolonged repetitive movements
- Avoiding exposure to heat such as saunas, steam room, sunburn
- Avoiding tight clothing, shoes and jewellery
- Wearing protective clothing, gloves or shoes e.g. when gardening or washing dishes
- Wearing compression garments prophylactically on flights, long car journeys or when exercising
- Avoid weight gain/overweight

Skin care

Maintaining skin integrity is extremely important in lymphoedema as the risk of complications is high. The condition of the skin can be preserved, and infection minimised through education of the patient and family on meticulous skin care and hygiene, highlighting associated risk factors. Referrals to wound-care specialists should be made for advanced wound care when required.[1-4,7,13]

Exercise

Exercise is extremely beneficial in managing lymphoedema when performed in a safe and controlled manner as recommended

by the HCP. Existing co-morbidities must be considered when tailoring a specific exercise programme, which must include deep breathing. Elevation is only effective in managing the early stages of lymphoedema.[8]

Manual lymph drainage (MLD)

MLD[1-4,6-10] is a gentle manual therapy technique that takes between 45–60 minutes to complete, systematically stimulating the lymphatic vessels, re-routing lymphatic fluid away from congested tissue towards healthy lymphatic regions of the body. Benefits of MLD include reduced pain, reduced limb volume, improved circulation and improved mobility and range of motion. MLD is effective as a stand-alone treatment but is most successful in combination with CDT.

For optimal results in the acute phase (two to four weeks), daily treatment is recommended. In the maintenance phase, check-ups by a therapist are essential to monitor the progress and to provide support at a minimum, twice per year. Self-lymph drainage (SLD) is taught by the therapist to be performed daily by the patient/caregiver in the home setting to maintain the reduction of oedema achieved in therapy.

Compression therapy

This consists of multi-layered (short-stretch) lymphoedema bandaging (MLLB), Velcro wraps and garments (day/night). Compression should not be applied if ankle brachial pressure index (ABPI) is less than 0.79. Compression therapy poses many challenges with patient compliance. The therapist needs to ensure that the donning/doffing of compression garments and bandages is possible for the patient or with the help of a care-giver.[11,12]

Compression bandaging

The purpose of MLLB is to reduce oedema, restore shape to the limb, support overstretched skin, eliminate lymphorrhoea and break down hard fibrotic tissue. This bandaging system includes stockinette, conforming bandages (for toe or finger bandaging), cotton and/or foam padding and short stretch bandages of varying sizes. Bandaging is used to reduce the limb in the intensive phase of treatment and affects microcirculation and increases lymphatic drainage. If not correctly applied, compression bandaging can worsen the lymphoedema. Fragile skin, decreased sensation or numbness need to be taken into account. It is recommended that soft padding materials be used over vulnerable areas and dense padding/foam be used to break down hard fibrotic areas.[10-12]

Compression garments (Table IV)

Compression garments[1-3,11-12] are used during maintenance phase of treatment once the oedema has been reduced. They can be categorised as circular knit (seamless, ready to wear, off the shelf garments) or flat knit garments (has seams, thicker and custom made). Garments come in various pressures (mmHg) and the classification standard (classes) varies across countries. The garments recommended for maintaining lymphoedema range from 20–40 mmHg. This system is also used for medical aid reimbursement purposes.

Table IV. Compression classes and indications

Class	Approximate pressure ranges (mmHg)	Indications for stage	
		Lower limb	Upper limb
1	15–20	Latent stage (0)	Latent stage (0)
2	20–30	Stage 1	Stage 1
3	30–40	Stage 2	Stage 2
4	>40	Stage 3	–

In South Africa, pressure garments are often made by occupational therapists but the efficacy of these garments with regards to pressures applied remains undetermined. Medical orthotists and prosthetists play a valuable role in measuring and fitting compression garments.

Non-elastic compression devices with Velcro closures, such as wraps, can often allow for more flexibility as well as ease of donning. Donning aids are sometimes necessary due to fragile skin and low energy levels. Independence, strength, comfort and mobility are key considerations with fitting appropriate garments and ensuring wearing compliance. Night time garments are useful to maintain reduction of lymphoedema and prevent re-accumulation of fluid reduced in therapy.

Contraindications to CDT

These include acute DVT, acute congestive cardiac failure (CCF), acute renal failure and lymphoedema/oedema of unknown aetiology.[1-4]

Other treatments

Taping techniques

The use of elastic taping techniques applied by a skilled therapist is useful. Caution needs to be taken with fragile skin and open wounds. Benefits of taping include oedema reduction, support and pain relief.[2]

Table V. Four basic surgical modalities used for the treatment of lymphoedema

Type of surgery	Procedure	Results
Excisional procedures	These include debulking methods – Sistrunk and Charles procedure	Complications are significant as healthy tissue, including the lymphatics, is also removed. Unsightly appearance
Liposuction	Liposuction is a less invasive method of removing subcutaneous fat	Associated with fewer complications; has been shown to be very effective in conjunction with CDT
Lymphatic reconstruction	Microsurgical procedures as a means of restoring lymphatic flow	Reported complications associated with lymphatic reconstruction are few; requires surgeons that are highly trained in microsurgery
Tissue transfer procedures	Bypass from the damaged lymphatics is created using healthy lymph nodes and/or tissue with associated lymphatic vessels	Reports of reduced limbs have been noted but more research is required to determine if this is maintained over time

Intermittent pneumatic compression (IPC)

IPC is a lymphatic drainage pump that uses the cyclical shifting of air pressures through sleeve or boot chambers. Multiple chamber pumps have been shown to be more effective, and different brands/devices offer varying quality of treatment. There is limited evidence to support the sole use of IPC in lymphoedema management. It should be used in conjunction with CDT, and supervision is essential to educate the patient to perform MLD before use and to prevent complications. These machines are available in South Africa, vary in quality, and are fairly costly.[2,11-12]

Surgery (Table V)

The advancement in surgical techniques[1-3,5] has broadened the possibilities for treatment but conservative management i.e. CDT, should always be considered first. Not all procedures are currently available in South Africa and patient compliance with self-management is essential before and after surgery.

Psychosocial support

Psychosocial support[1-3] covers a broad range of topics, and must always be considered in the holistic management of the individual. Lymphoedema patients can experience issues with body image, self-esteem, sexual health, role identity, to name a few and should be referred to appropriate HCPs. Modern communication has created various platforms on social media where patients can discuss the issues they are experiencing. Group support or exercise classes can be extremely beneficial to the individual and resources should be offered and referrals made accordingly.

Palliative care

Lymphoedema often presents in patients who have a life-threatening illness such as cancer. Palliative care[2,3] is an approach that improves the quality of life of people and their families. The aim of lymphoedema treatment is to preserve function, reduce pain and ease comfort till the last days of life. Physical caring and touch is beneficial and meaningful to the patient with advanced cancer.

Conclusion

The purpose of this document is to provide a concise overview and awareness of lymphoedema diagnosis as well as the management thereof, from a multi-disciplinary perspective. The way forward will be to draft position statements on specific areas of lymphoedema management in working towards compiling a South African Lymphoedema Management Consensus Document. For more information please visit www.laosa.co.za or send email to info@laosa.co.za.

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