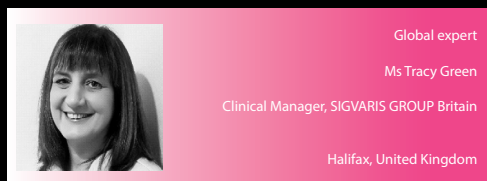
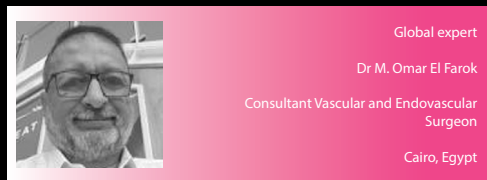


Embracing the Power of a Multidisciplinary Approach for Lipoedema



Introduction

Lipoedema is a chronic disorder characterized by abnormal fat distribution and accumulation, causing pain and affecting the extremities. It predominantly affects women, with an estimated incidence of 10% in adult females. Interestingly, the limb circumference remains stable even with weight loss or caloric restriction. The condition has significant emotional and physical impacts on those affected.

The onset of lipoedema typically occurs during adolescence, often triggered by hormonal changes. Men, although carrying the genetic predisposition, are less affected due to the absence of hormonal influences, making the condition more prevalent in women. The World Health Organization (WHO) acknowledged lipoedema as a distinct entity in 2019, and Brazil followed suit in January 2022. Despite its prevalence, lipoedema remains relatively unknown to many patients and healthcare professionals, and its coverage within the public health system is not extensive.

Diagnosing this chronic disease necessitates a thorough analysis of the patient's experiences. Key clinical manifestations include pain, which tends to halt before reaching the hands and feet, the presence of "cankles," and hematoma formation. Assessing the family history can also aid in determining the likelihood of lipoedema, as 60% of patients have a first-degree relative affected by the condition.

The primary cause of lipoedema and its onset lies in hormonal changes, triggered by factors such as contraceptives, pregnancy, or menopause. The condition may worsen alongside dysfunction in the lymphatic and blood capillaries, exacerbated by inflammation. To offer optimal care and management, it is crucial for healthcare professionals to be aware of these underlying factors. In the UK, there are notable issues surrounding liposuction for lipoedema, with calls for further research. Many patients opt for surgery abroad due to limited options domestically. This unavailability and cost-related challenges underscore the necessity for comprehensive research. The goal is to draw attention from the National Institute of Clinical Excellence to advance lipoedema surgery within the UK.

At present, NHS does not cover lipoedema treatment, leading patients to explore overseas alternatives due to financial considerations. While liposuction is accessible for lymphedema, it is primarily performed privately due to clinic constraints. To advocate for change, it is crucial to emphasize research outcomes, encompassing both clinical and patient perspectives, highlighting the positive impact of these treatments on overall quality of life.

Supported by



“It is vital to take a multidisciplinary approach; this heavily involves trying to change the lifestyle of the patients, ensuring that the swelling, bruises, heaviness, inflammation, and pain can be reduced.”



Global expert
Dr Fabio Kamamoto
Plastic Surgeon, Founder of Lipedema Brazil
Institute
São Paulo, Brazil

Classifications of Lipoedema

There are different classification systems for lipoedema, and the categorization of lipoedema into specific types can vary. However, one commonly used classification system identifies 5 different types of lipoedema based on the distribution and severity of fat accumulation. These types are:

- **Type 1:** This type involves the lower extremities, primarily affecting the hips, buttocks, and thighs; fat between the navel and hips; the feet are usually spared. It typically presents with a symmetrical distribution of fat
- **Type 2:** Type 2 lipoedema also affects the lower extremities but extends down to involve the calves and ankles; from the pelvis to knees; the feet remain unaffected. The fat distribution is still symmetrical
- **Type 3:** Type 3 lipoedema is characterized by a more widespread distribution of fat. It affects the upper and lower extremities, including the arms and hands. It can be found in the whole lower limb. The fat deposition is symmetrical and may extend up to the shoulders
- **Type 4:** In type 4 lipoedema, the fat distribution becomes more diffuse and extensive. It involves the entire body, including the trunk, chest, and back. This type often presents with a 'column-like' appearance, and the skin is compromised here
- **Type 5:** Type 5 lipoedema is the most severe form, characterized by an extreme and massive accumulation of fat throughout the body. The fat distribution is typically asymmetrical and can cause significant functional impairment and psychological distress. There are a large number of skin deformities and lymphatic damage

It is important to note that these types represent a general framework, and lipoedema can vary in presentation and severity from person to person. Every occurrence should be viewed on a case-by-case basis.

Lipedema treatment involves a multidisciplinary approach, combining conservative and surgical methods. Conservative measures include anti-inflammatory diets, low-impact exercises, and hormone management. Supplements are being studied for potential benefits.

Surgical interventions, like liposuction, are considered when conservative approaches are insufficient. Liposuction reduces limb volume and may use lymphatic-sparing techniques. Skin issues may require laser therapy or skin removal surgery.

Collaboration among healthcare professionals, including nutritionists, physical therapists, endocrinologists, and vascular surgeons, is crucial for effective treatment.

Lipedema Brazil is dedicated to raising awareness, conducting research, and providing education and support to patients. Their recent publication on lymphatic system improvements after surgery contributes to better understanding and refining treatment approaches.

Poll Question 1: Different treatment modalities are included as a multi-disciplinary approach for lipoedema except:

- A. Anti-inflammatory medication (28%)
- B. Physical Exercise (0%)
- C. Excessive sex hormone dosage (60%)
- D. Add diosmin (12%)

Answer: C

Poll Question 2: Mediterranean diet modification has several advantages excluding:

- A. Help reduce pain (6.46%)
- B. Help reduce swelling (9.68%)
- C. Prevent the development of cancer (70.96%)
- D. Preserve muscle mass (12.9%)

Answer: C

"It is vital to take a multidisciplinary approach; this heavily involves trying to change the lifestyle of the patients, ensuring that the swelling, bruises, heaviness, inflammation, and pain can be reduced."



Global expert
Dr Gabriela Faerber
Lecturer, General Practitioner
Hamburg, Germany

Treatment

A multidisciplinary approach is vital for lipoedema treatment. This approach involves changing patients' lifestyles to reduce swelling, bruises, heaviness, inflammation, and pain. A multidisciplinary team consisting of a vascular surgeon, nutritionist, endocrinologist, and physical therapist is highly beneficial for achieving the best possible results for lipoedema patients. Various strategies can be employed within this approach to assist the patients.

An ongoing randomized controlled trial (RCT) in Germany, expected to conclude by the end of 2025, is comparing conservative treatment to liposuction for lipoedema. If the RCT results favor liposuction, reimbursement might be at a low financial level. This emphasizes the importance of experienced professionals being able to provide this treatment. Ethnicity might play a role in the severity of lipoedema.

Anti-inflammatory Diet

The main characteristic of a Mediterranean diet is its plant-based nature. It entails the consumption of abundant seasonal vegetables, olive oil for cooking or seasoning (the main fat source), fresh seasonal fruit as a dessert, regular intake of nuts and seeds (as part of recipes or healthy snacks), consumption of legumes several times weekly, daily intake of whole cereals, moderate portions of fish two to three times weekly, limited amounts of dairy (yogurt, milk, cheese) several times per week, use of spices and herbs to flavor recipes, infrequent consumption of sweets (a few times weekly), inclusion of red and processed meat in small amounts with utmost moderation, 3 to 4 eggs weekly, drinking plenty of water, and moderate consumption of wine always with meals, respecting any cultural beliefs. A hallmark of the Mediterranean diet is the inclusion of unprocessed foods, which are rich in healthy nutrients compared to Western dietary patterns that are abundant in processed and ultra processed foods, high in calories but poor in nutrients ("empty calories"). Following a Mediterranean

diet can aid in managing lipoedema, as it also supports an anti-inflammatory approach. A study involving 29 patients who followed a plant-based diet consisting of fruits, whole grains, vegetables, healthy fats like olive oil, reduced sodium, and 25g of fiber demonstrated clear results. These patients experienced reduced pain, swelling, and fat reduction in the legs while maintaining muscle mass. While a Mediterranean diet has been proven to be significantly beneficial, combining it with an anti-inflammatory approach and generally adopting a low-carb diet can also provide positive effects. It is important to note that insulin resistance is pro-inflammatory. Lipoedema is not necessarily progressive, and patients are encouraged to maintain a healthy weight. It's essential to communicate to patients that lipoedema is not necessarily linked to psychological issues or obesity.

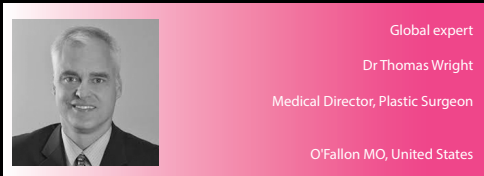
Physical Therapy and Physical Activity

A physical therapist can play a vital role in enabling the patient to move more effectively. This includes the main method of Complex Decongestive Therapy (CDT), a comprehensive treatment approach used for managing lipoedema, a condition characterized by the accumulation of lymph fluid, resulting in swelling and tissue damage. CDT aims to reduce swelling, improve lymphatic flow, and enhance overall function and quality of life for individuals with lipoedema. It typically involves the following components:

Manual Lymphatic Drainage (MLD)

MLD is a specialized massage technique performed by a trained therapist. It involves gentle, rhythmic, and repetitive movements that stimulate the lymphatic vessels, encouraging the drainage of excess fluid from the affected area. MLD helps redirect lymph flow to healthy lymphatic pathways and reduces swelling, which can include the removal of excess fluids, especially after surgery.

“Compression plays a crucial role in managing lipoedema. It involves the application of pressure through compression bandages or garments to promote fluid movement, prevent reaccumulation, and provide support to the affected area.”

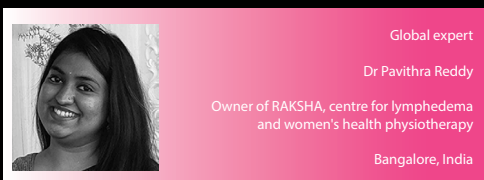


Compression Therapy

Compression therapy plays a pivotal role in the management of lipoedema. It involves applying pressure through compression bandages or garments to facilitate fluid movement, prevent reaccumulation, and provide essential support to the affected areas. Typically, compression garments are worn throughout the day to maintain the reduction achieved through other components of Complex Decongestive Therapy (CDT).

Exercise

Exercise constitutes an indispensable component of CDT. It serves to enhance muscle pumping action, improve lymphatic flow, and sustain or even enhance joint mobility. Low-impact physical activities are favored as they minimize stress on the joints and reduce the risk of injury. Gentle activities like walking, cycling, and yoga offer substantial health benefits while being kind to the body. These activities can be seamlessly incorporated into the multidisciplinary approach for lipoedema patients. However, the choice of specific exercises is contingent upon the individual's condition and functional capacities. It may encompass range-of-motion exercises, resistance training, and aerobic activities tailored to each patient's unique needs.



Compression Garments

Compression therapy plays a pivotal role in lipoedema management. It involves the utilization of compression garments or bandages to apply targeted pressure to the

affected areas, primarily focusing on the lower extremities. These compression garments are purposefully designed to provide graduated compression, wherein the pressure is highest at the extremities and gradually decreases towards the body. The advantages of employing compression therapy for lipoedema are multifaceted:

- Helps smooth lobules and cuffs
- Improves mobility
- Decreases pain
- Garments have anti-inflammatory properties

As depicted in Figure 1, the implementation of compression resulted in a 2% decrease in circumference measurements. Subsequently, when pneumatic compression pumps (PCD) were introduced, this reduction doubled in some areas.

Bioimpedance tissue analysis, also known as bioelectrical impedance analysis (BIA), is a noninvasive technique employed to estimate body composition by assessing the electrical properties of body tissues. It offers insights into body fat distribution, lean body mass, and fluid compartments. The fundamental principle of BIA entails passing a low-level electrical current through the body and measuring the resistance encountered by the current. Different types of tissues, including fat, muscle, and water, exhibit distinct electrical conductivities, enabling the estimation of body composition based on their relative proportions.

In a typical BIA measurement, electrodes are positioned on specific body sites, such as the hands and feet. A mild electrical current is then transmitted through the body, and the impedance (comprising resistance and reactance) to this electrical signal is recorded. This data is subsequently utilized to compute various parameters pertaining to body composition. Given its cost-effectiveness and noninvasive nature, BIA can be effectively employed to monitor the efficacy of compression therapy and ensure its continued effectiveness.

Table 1 presents findings from a study wherein lipoedema patients demonstrated a decrease in extracellular to total body water ratio (reflecting the proportion of water outside the cell compared to the total body water) following compression therapy.

“An endocrinologist can aid with the patient’s hormonal issues, which is vital in tackling lipoedema”

Despite the numerous benefits that compression therapy offers, it's observed that only 70% of lipoedema patients consistently adhere to wearing compression garments. In a study, lipoedema patients provided insights into their motivations for wearing compression garments, which included feelings of support (37%), pain reduction (67%), and improved mobility (54%).

Key Considerations for Effective Compression Therapy

For compression therapy to yield optimal results, it must be executed meticulously, encompassing several critical factors:

- **Selection of Appropriate Material:** Choosing the right material is paramount. Each patient is unique, and the material should be tailored to their specific needs. Medical-grade compression materials are essential.
- **Proper Fit:** Achieving an accurate fit is crucial. Ill-fitting compression garments can compromise their effectiveness. Given the unique anatomical variations among patients, a customized fit is often required.

Types of Compression Materials

- Various types of compression materials are available, each with its own set of characteristics:
- **Circular Knit:** This is the least expensive option. While it functions effectively, there is a risk of it getting caught in cuffs and lobules.
- **Flat Knit:** Flat knit materials are less prone to getting caught in cuffs and lobules, making them a preferred choice in some cases.
- **Weaves:** Weave-type compression materials are comfortable but may not always meet the medical-grade standards required for lipoedema management.
- **Velcro Appliances:** Velcro-based compression solutions are relatively expensive and may necessitate frequent adjustments

Setting Realistic Treatment Goals

In lipoedema treatment, particularly for lipo-lymphedema patients, addressing both physical and psychological aspects is vital. Setting realistic treatment goals is essential, given the

complexities of managing lipoedema. Patients may experience early improvements, but it's crucial to temper expectations for sustained rapid progress, as lipoedema often requires long-term management.

By setting achievable milestones and managing expectations, healthcare providers support patients' mental and emotional well-being, encouraging compliance with treatment plans. This collaborative approach aligns goals with individual journeys toward effective lipoedema management.

Treatment Criteria: How are treatment choices (conservative vs. surgical) determined for lipoedema patients?

Pre-op and Post-op Care: What self-care measures are recommended before and after lipoedema surgery?

Dr. Fabio's Response:

Dr. Fabio emphasized starting with conservative treatment for all lipoedema patients. He stressed its importance, not only for lipoedema but also for overall health, highlighting diet and exercise. He recognized external factors like pregnancy and menopause and advocated for the broad use of conservative treatment for both lipoedema patients and the general population.

Figure 1: Change in circumference measurements with the implementation of compression.

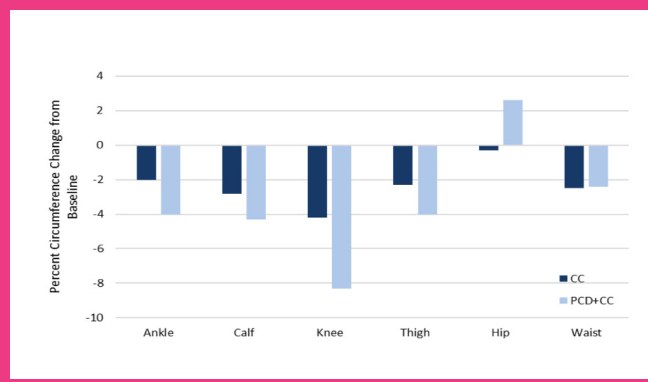


Table 1: Extracellular to total body water.

Baseline	0.392 ± 0.013
Follow-up change 0.007	0.389 ± 0.012 [Δ 0.007]

“Vascular surgeons can aid in carrying out the surgery, it should be noted that 80% of lipoedema patients have varicose veins.”

Many female patients wear "athletic leggings," claiming they provide compression. However, much of this is not medical-grade. Using non-medical-grade compression garments after a surgical procedure can pose several risks and complications. Here are some potential dangers:

1. **Inadequate compression:** Non-medical-grade compression garments may not provide the appropriate level of compression required for proper healing and support, leading to increased swelling, bruising, and delayed healing.
2. **Poor fit:** Non-medical-grade garments may not be designed to fit properly or provide even compression throughout the treated area. Ill-fitting compression garments can result in uneven pressure distribution, leading to contour irregularities or increased discomfort.⁶
3. **Reduced effectiveness:** Non-medical-grade compression garments may lack the advanced features and materials found in medical-grade garments, which are specifically designed to enhance comfort, promote proper circulation, reduce swelling, and aid in the recovery process. Non-medical-grade garments may not offer these benefits, leading to suboptimal results and prolonged recovery time.
4. **Skin irritation and infection:** Compression garments that are not made from medical-grade materials may irritate the skin or cause allergic reactions. Additionally, poor breathability can create a warm and moist environment, increasing the risk of bacterial or fungal infections.

The greatest benefits come from medical-grade compression materials. Also, it is vital for the correct amount of compression strength to be applied, gradually increasing it as the compression therapy continues. As the legs are very tender, using the strongest compression can be very detrimental. A work-in period of 1 - 3 sessions of manual work can be done to reduce discomfort/pain and help patients tolerate compression better.

Endocrinologists and Obesity

An endocrinologist can help address the patient's hormonal issues, which are vital in tackling lipoedema. They can also assist with issues related to obesity, which, if necessary for the patient, can help relieve pain and be beneficial. However, it's crucial for medical professionals to be keenly aware that lipoedema and obesity are not the same conditions. Lipoedema does not respond to physical activity; a patient with lipoedema working out seven times a week will not resolve it. Bariatric surgery is not indicated for lipoedema, especially as the purpose of this surgery relies on the fundamental basis that severe obesity is a disease associated with multiple adverse effects on health, which can be reversed or improved by successful weight loss in patients who have been unable to sustain weight loss by non-surgical means⁷.

Incorrectly associating lipoedema with obesity can cause the patient a lot of added stress that can be mitigated with better-educated medical professionals. Similarly, telling the patient that lipoedema is always a progressive condition should be avoided, as not every case is necessarily progressive. Care must be provided to patients, especially younger patients; making wrongful associations or statements may lead to stress, and the patient may overwork themselves in an attempt to lose weight.

Surgery

American research and guidelines suggest that surgery is the only and best available technique to remove abnormal lipoedema tissue⁸. In a study involving 148 female patients, it was demonstrated that after 1 year of surgery, 84% experienced a better quality of life, 96% showed improved mobility, and 100% had volume reduction in the affected areas⁹. Long-term outcomes of surgery are also promising, as volume reduction can be maintained even after 8 years. Overall, surgery allows for improved symptoms and a significantly better quality of life. Objective improvements, such as size and lymphatic function, accompany the subjective improvements related to pain, bruises, and heaviness¹⁰⁻¹³.

“The development of lipoedema involves a combination of factors, including genetic predisposition and hormonal changes.”

A patient with lipoedema would ideally go through the following stages, provided the multidisciplinary approach is adhered to:

- Stage 1: The patient is on a diet, participating in physical activity as advised by a physical therapist, and wearing compression garments. However, this approach can only remove up to 10% of the fat.
- Stage 2: The patient undergoes surgery and can have up to 40% of the fat removed.
- Stage 3: After surgery, the patient follows a healthy diet, engages in regular physical activity, and uses the appropriate compression garments to maintain the benefits achieved.

There is a cyclic nature of lipoedema inflammation, referring to the tendency for the condition to worsen and improve in a cyclical manner. Individuals with lipoedema often experience periods of stability or minimal progression, followed by phases of rapid fat accumulation and symptom exacerbation.

These cycles may vary in duration and intensity from person to person. During the progressive phase, affected areas may undergo significant enlargement, leading to an increase in fat mass and characteristic changes in body shape. This can result in discomfort, pain, and reduced mobility. Additionally, individuals with lipoedema may experience associated symptoms, such as easy bruising, sensitivity to touch, and a feeling of heaviness or pressure in the affected limbs.

With the correct implementation of a multidisciplinary approach, the cycles can decrease due to the fact that triggers occur less frequently. This should be done before surgery to prevent an inflammation peak from occurring during the procedure.

Vascular surgeons can aid in carrying out the surgery; it should be noted that 80% of lipoedema patients have varicose veins. While lipoedema can coexist with varicose veins, they are separate conditions with different underlying causes. Lipoedema is believed to have a genetic component and hormonal influences

While varicose veins are primarily associated with venous insufficiency and weakened vein valves (7), if an individual has both varicose veins and lipoedema, a comprehensive approach to treatment may be necessary. Surgery starts by addressing varicose veins, and afterward, the lipoedema can be removed via tumescent liposuction; tumescent liposuction is a cosmetic surgical procedure used to remove excess fat deposits from specific areas of the body and is considered a relatively safe and effective method for body contouring.

During the tumescent liposuction procedure, a diluted solution containing a local anaesthetic (lidocaine) and a vasoconstrictor (epinephrine) is injected into the targeted areas. The solution causes the fat cells to become swollen and firm, making it easier for the surgeon to remove them. After the tumescent solution is injected, small incisions are made in the skin, and a cannula is inserted into the fatty tissue. The cannula is connected to a vacuum device, and the surgeon gently moves it back and forth to break up the fat cells and suction them out. A technique of lymphatic sparing involves using small cannulas in a movement parallel to the leg to avoid drainage from the lymphatic system; due to the nodules, there are a lot of obstructions, and more fibrosis means more nodules. This then requires the manual removal of fats.

The use of the tumescent technique has several advantages compared to traditional liposuction methods. The local anaesthetic in the solution helps numb the treated area, reducing the need for general anaesthesia. The vasoconstrictor helps minimize bleeding, reducing the risk of complications and allowing for more precise fat removal. Additionally, the tumescent solution helps to shrink blood vessels and minimize bruising. Tumescent liposuction can allow for a patient to have fewer bruises and less heaviness in their legs. It can improve the quality of life, allowing the patient to engage in more activities, including the simple ability of transportation. There are also other ways to remove fat, including the use of skin tightening technologies and dermolipectomy.

Multidisciplinary Approach To Lipedema

Etiology of Lipedema

Lipedema develops due to a combination of genetic predisposition and hormonal changes. Approximately 60% of patients have a family history of the disease, emphasizing its genetic influence. Hormonal shifts during life stages like pregnancy and menopause can trigger or worsen the condition, leading to malfunctioning lymphatic and blood capillaries and the disproportionate accumulation of fat in the lower extremities.

Classifying Lipedema: Types and Stages

Lipedema can be categorized into various types based on the body's fat distribution pattern. These types (Type I, II, III, IV, and V) involve fat accumulation in specific body regions. Additionally, the disease can be classified into stages according to the severity of skin and fat involvement, ranging from Stage I with mild edema to Stage IV with significant skin deformities and lymphatic damage.

Conservative Treatment Approaches

The management of lipedema employs a multidisciplinary approach that includes conservative treatments. This approach encompasses anti-inflammatory diets, physical activity, and supplements as essential components. Mediterranean and plant-based diets have shown promise in reducing pain and swelling while preserving muscle mass.

The Role of Compression Therapy

Compression therapy plays a crucial role in the treatment of lipedema, offering numerous benefits. Compression garments, such as stockings, help smoothen lobules and cuffs, enhance mobility, and alleviate pain. Additionally, these garments possess anti-inflammatory properties, reducing edema and decreasing limb size. Compression therapy also improves venous and lymphatic function, aiding in waste removal and promoting skin health. Furthermore, it sustains the benefits achieved through other treatments like manual lymph drainage (MLD), pumps, or surgical interventions.

Bioimpedance Tissue Analysis

Bioimpedance tissue analysis is a valuable tool for assessing tissue composition, particularly extracellular water (ECW), in lipedema patients. It employs low and high-frequency currents to examine interstitial and lymphatic changes associated with interstitial edema. The presence of interstitial edema and lymphatic stasis establishes a connection between lipedema and lymphedema.

Optimizing Compression Therapy

Despite the numerous benefits of compression therapy, adherence remains a challenge, with only 70% of lipedema patients consistently using compression garments. Achieving optimal results with compression therapy requires proper fitting, selecting the right material and strength, and mastering correct donning techniques. While initial discomfort may occur, patients can adapt to and tolerate compression therapy effectively with persistence.

Exploring Compression Garment Varieties

Different types of compression garments cater to diverse needs and preferences. Circular knit garments are cost-effective, while flat knit garments excel in fitting cuffs and lobules due to their superior fit. Weaves offer comfort but may not always meet medical-grade standards, and velcro appliances, while effective, can be expensive and require adjustments.

The Lymphedema Treatment Act's Promise

The Lymphedema Treatment Act, set to be implemented in 2024, aims to enhance the coverage of compression garments prescribed by physicians for patients with lymphedema, including those with lipedema, under Medicare. This legislative advancement holds the potential to improve access to essential treatment options and enhance overall care for individuals dealing with lipedema.

Understanding Lipedema's Causes

Lipedema's etiology is multifaceted, involving genetic predisposition and hormonal changes. Studies suggest that 60% of patients have a first-degree relative with the condition, highlighting its strong genetic component. Hormonal fluctuations during phases like contraceptive use, pregnancy, and menopause can trigger or worsen the condition. These factors contribute to the dysfunction of lymphatic and blood capillaries, resulting in the accumulation of excess fat, particularly in the lower extremities.

Classifying Lipedema: Types and Stages

Lipedema is categorized based on the pattern of fat distribution into various types. Type I involves fat accumulation between the navel and hips, while Type II extends around the pelvis and down to the knees. Type III encompasses fat from the pelvis down to the ankles. Type IV involves fat spreading from the shoulders to the wrists, and Type V primarily affects the calves. The disease is further divided into stages, reflecting the degree of skin and fat involvement.

Conservative Treatment

The Multidisciplinary Approach

Managing lipoedema effectively often involves a multidisciplinary approach, incorporating various elements such as anti-inflammatory diets, physical activity, and dietary supplements. Mediterranean and plant-based diets have demonstrated promise in reducing pain and swelling while preserving muscle mass.

Benefits of Compression Therapy

Compression therapy stands out as a valuable treatment option for individuals with lipoedema, offering a wide range of benefits to enhance overall quality of life. These benefits encompass the smoothing of lobules and cuffs, improved mobility, pain reduction, and anti-inflammatory properties. Compression garments achieve these outcomes by applying pressure, which reduces edema, resulting in a decrease in limb size. Furthermore, compression therapy enhances venous and lymphatic function, aiding in waste clearance and skin health. Importantly, it also helps maintain the benefits gained from other treatments like manual lymph drainage (MLD), pneumatic compression devices, or surgery.

Utilizing Bioimpedance Tissue Analysis

Bioimpedance tissue analysis proves to be a valuable technique for assessing tissue composition, especially extracellular water (ECW), in individuals with lipoedema. This analysis employs both low and high-frequency electrical currents to evaluate changes in ECW, which closely relate to interstitial and lymphatic alterations. The identification of interstitial edema and lymphatic stasis through this analysis provides critical insights for the management of lipoedema.

Overcoming Challenges

Ensuring Effective Compression Therapy

Despite its benefits, studies show that only 70% of lipoedema patients regularly wear compression garments. Proper fitting, selecting the appropriate material and strength, and learning proper donning techniques are essential to achieve optimal results with compression therapy. Patients may experience initial discomfort during the adjustment period, but with guidance and support, they can effectively tolerate and adapt to compression therapy.

Types of Compression Garments

Various types of compression garments are available, catering to different needs and preferences. These include circular knit garments, which are cost-effective but may

get caught easily, and flat knit garments, which provide an excellent fit for cuffs and lobules. Weaves offer comfort but may not meet medical-grade standards, and velcro appliances are relatively expensive and may require adjustments.

Conclusion

In the treatment of lipoedema, the focus should shift towards reducing the pain experienced by the patient, rather than solely emphasizing fat volume reduction or changes on the scale. The amount of fat removed doesn't necessarily correlate with improvements in the patient's quality of life. This is particularly true for patients with severe pain but not a significant fat volume, as pain isn't solely dependent on fat size.

A critical mission in lipoedema treatment is to raise awareness about the condition and transform the landscape of its treatment. Providing healthcare professionals with better knowledge and training is crucial, given that lipoedema is often not well-understood in the medical community. It's also essential to improve access to treatment, as institutions like NICE have recognized the need for more research in this area. Many UK patients seek treatment abroad due to limited access to necessary procedures.

Global awareness of lipoedema is paramount because many patients feel hopeless in their situation. However, there is hope, and this is just the beginning of the work needed. With advancing technologies, ongoing studies, and dedicated healthcare providers focused on this chronic disease, significant improvements can be achieved. New discoveries and developments will pave the way for a better situation for lipoedema patients.

The core message is that lipoedema should be treated comprehensively, incorporating elements like diet, compression, and surgery. It requires a multidisciplinary approach involving various medical professionals, such as nurses, doctors, physiotherapists, and nutritionists. These treatments can substantially enhance the quality of life for affected individuals.

The ultimate goal in treating lipoedema patients is to alleviate symptoms and reduce pain. This can be achieved through compression, manual lymph drainage (MLD), and nutrition, all within a comprehensive approach. Building a community of experts is essential for effective lipoedema treatment. Additionally, providing appropriate counseling about the nature of the disease is crucial, as mental health considerations should be on par with physical health, given the potential stress patients may experience. Understanding the distinction between this

chronic disease and obesity can facilitate proper support, and providing patients with comfortable compression options that satisfy their cosmetic preferences is essential.

Poll Question 3: What advantages does compression therapy have for lipoedema?

- A. Reduces swelling (21.05%)
- B. Enhance movement (0%)
- C. Prevents further tissue damage (0%)
- D. All of the above (78.94 %)

Answer: D

Poll Question 4: Who should avoid the use of compression therapy for lipoedema?

- A. Individuals with skin disorders (eczema, psoriasis) (17.3%)
- B. Individuals who experience circulation issues (34.44%)
- C. Individuals with latex allergy (3.44%)
- D. All of the above (44.82%)

Answer: D

Question Directed towards Dr Faerber

What about the compression class – do we encourage class two compression like for other lipoedema patients, or do we prescribe class one?

Answer: Selecting the right compression material is essential. In the early stages, class two compression can be considered, particularly for younger patients with slimmer legs and less noticeable visual signs. However, as the condition progresses with lobules and nodes, finding the appropriate compression level becomes crucial. Fortunately, compression is fully covered by the healthcare system, and doctors can make informed decisions about the compression type.

Question Directed towards Dr Wright

Did you record hormonal changes in BIS (bioelectrical impedance spectroscopy) during your impedance study, specifically noting the hormonal cycle phases?

Answer: No, we didn't record hormonal changes during the BIS study. We performed the measurements at monthly intervals, aiming for consistency within the calendar month. However, I acknowledge that the menstrual cycles of individuals can vary, and it's an excellent point to consider tracking the hormonal phase during future assessments.

Question From the Audience

In the debate on interstitial fluid and inflammation, you mentioned an increase in hip fluid and your belief in the significance of interstitial fluid, despite opposing views. Can you discuss your stance and future research plans on fluid accumulation in lipoedema?

Dr. Färber's Response: Certainly, there's an ongoing debate about interstitial fluid in lipoedema. I believe in its importance, even though some disagree. We're planning a multicenter study to explore fluctuations in thigh measurements throughout the day, challenging the idea that there's no edema in lipoedema. This research could reshape our understanding of this phenomenon.

Question From the Audience

Is there a connection between insulin resistance and lipoedema, and can early-stage lipoedema be prevented by a low-sugar diet?

Dr. Kamamoto: In my personal opinion, there doesn't appear to be a strong correlation between metabolic diseases like diabetes, high cholesterol, and high blood pressure and the presence of excess fat in the legs of lipoedema patients. So, I believe there may not be a significant connection between these metabolic conditions and lipoedema.

Dr. Wright: I think it might be the opposite. The fat distribution in the hips and thighs of lipoedema patients may actually make them more insulin sensitive. However, if secondary obesity develops, then insulin resistance may occur, similar to what happens in other individuals.

Dr. Färber: I agree with Dr. Wright. When comparing lipoedema patients with obese patients of similar BMI, lipoedema patients often have better metabolic profiles. Female fat areas, such as the hips and thighs, may provide some protection against insulin resistance. Abdominal obesity, common in many women, can negate this advantage. Additionally, the ketogenic diet, which reduces insulin levels, may be effective for lipoedema patients because their fat cells in these regions might be less prone to releasing fatty acids even at normal insulin levels. So, even though there may not be insulin resistance, these fat cells may respond more to lower insulin levels. This is my opinion, supported by some scientific evidence.

Question From the Audience

Is there a preferred type of garment for lipedema patients, such as pantyhose, knee-high, or thigh-high?

Dr. Reddy: Absolutely, the fit, material, and comfort of compression garments are crucial in ensuring patient compliance. If patients are not comfortable with their compression garments, it can lead to non-compliance, which can impact treatment outcomes significantly.

Question From the Audience

What compression class would you consider - 40 millimeter pressure?

Dr. Wright: We generally use class two compression, which is 20 to 30 millimeters of mercury. If a patient has secondary lymphedema, we may consider higher compression, around 30 to 40 millimeters of mercury.

Dr. Kamamoto: I agree with Thomas; we typically start with 20 to 30 millimeters of compression, and it's rare for us to use higher compression garments.

Question From the Audience

Could you clarify the poll about contraindications to compression?

Dr. Elfarok: Compression should never be used on individuals with circulation issues, particularly those with arterial insufficiency or ischemia. Improper compression in such cases can lead to gangrene, making it a contraindication to compression.

Question From the Audience

What is your experience with wraps for compression therapy?

Dr. Wright: We occasionally use wraps, but more frequently, we rely on compression garments. In complete decongestive therapy, sequential wraps are used less frequently.

Dr. Kamamoto: Wraps are rarely used, but there may be a place for them, especially after surgery when the volume of the legs significantly decreases. Wraps can help adjust garments during this period.

Take home messages from each speaker:

Dr. Kamamoto: Lipedema patients should hold onto hope because global awareness and research are expanding rapidly. Patients should believe in their potential for improvement as more technologies, studies, and dedicated doctors focus on this condition. Over the next decade, we can expect significant advancements in lipedema treatment.

Dr. Wright: The holistic approach to lipedema treatment is crucial, involving diet, compression therapy, and surgery when needed. This comprehensive care requires collaboration among medical professionals, including doctors, nurses, physiotherapists, and nutritionists. By working together, we can significantly enhance the quality of life for lipedema patients.

Dr. Färber: Looking back over the past decade, we can see substantial progress in lipedema treatment, giving us hope for the future. The primary goal in treating lipedema patients is to alleviate symptoms and reduce pain. This comprehensive approach involves choosing the right compression therapy, implementing manual lymphatic drainage (MLD), and providing appropriate nutrition. It truly takes a global community of experts to effectively address lipedema.

Dr. Reddy: Dr. Reddy emphasized five key points for lipedema treatment: First, the treatment should be multi-disciplinary, involving various healthcare professionals. Second, patients should receive comprehensive counseling about the nature of the disease and its prognosis. Third, it's essential to set realistic treatment goals. Fourth, mental health should be considered as important as physical health. Finally, the treatment should progress at a pace that ensures patient compliance.

Dr. Omar (on wraps): Wraps can have a role in post-surgery care for lipedema patients. However, their use may be limited in ongoing management. The focus should be on encouraging patients to move better. When it comes to compression garments, comfort and cosmetics are crucial factors. Options like zippers can make the application of compression garments easier, ultimately improving patient compliance and treatment outcomes.

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