

The Role of Compression Therapy in the Treatment of Venous Disorders

Arkadiusz Jawień*

Department of Vascular Surgery and Angiology, Antoni Jurasz University Hospital, Bydgoszcz & Toruń, Poland

DESCRIPTION

Venous disorders represent a broad spectrum of conditions resulting from impaired venous return in the lower extremities, most commonly due to valvular incompetence, venous obstruction, or dysfunction of the calf muscle pump. Chronic Venous Disease (CVD) encompasses manifestations ranging from telangiectasia and varicose veins to edema, skin changes and venous leg ulcers. Among the various treatment modalities available, compression therapy has remained the cornerstone of management for venous disorders for decades. Its effectiveness, non-invasive nature and adaptability to different disease stages make it a fundamental component in both acute treatment and long-term disease control [1].

The primary therapeutic mechanism of compression therapy lies in its ability to counteract venous hypertension, which is the central pathophysiological factor in venous disorders. By applying graduated external pressure—highest at the ankle and gradually decreasing proximally—compression reduces venous diameter, improves valve leaflet coaptation and enhances venous blood flow toward the heart. This reduction in venous pressure limits capillary leakage, thereby decreasing edema and inflammation in the surrounding tissues. Improved microcirculation also promotes oxygen and nutrient delivery to the skin, supporting tissue repair and preventing disease progression [2].

Compression therapy plays a major role in the management of symptoms associated with venous disorders, including leg swelling, heaviness, pain and fatigue. Patients with chronic venous insufficiency often experience worsening symptoms with prolonged standing or sitting, as gravitational forces exacerbate venous pooling. Consistent use of compression stockings or bandages alleviates these symptoms by supporting venous return and reducing interstitial fluid accumulation. As a result, patients frequently report improved comfort, mobility and overall quality of

life when compression therapy is appropriately prescribed and used [3]. In the treatment of venous leg ulcers, compression therapy is widely regarded as the most effective intervention for promoting healing. Venous ulcers develop as a consequence of sustained venous hypertension, leading to skin breakdown and chronic inflammation. Compression reduces edema and inflammatory mediators while enhancing blood flow in the ulcer bed, creating a favorable environment for wound healing. Numerous clinical studies have demonstrated that patients receiving adequate compression therapy experience faster healing rates and lower recurrence compared to those receiving wound care alone. Multi-layer compression bandaging systems and high-compression stockings are commonly used during the active healing phase, followed by long-term maintenance compression to prevent recurrence [7-9].

Various forms of compression therapy are available, allowing treatment to be modified to individual patient needs. These include elastic and inelastic bandages, graduated compression stockings, intermittent pneumatic compression devices and adjustable compression wraps. The choice of modality depends on factors such as disease severity, limb shape, mobility, patient dexterity and tolerance. Accurate measurement, proper fitting and patient education are critical to ensure effectiveness and adherence. Importantly, arterial insufficiency must be assessed before initiating compression to avoid compromising limb perfusion [10].

Despite its proven benefits, adherence to compression therapy remains a significant challenge. Many patients find compression garments uncomfortable, difficult to apply, or cosmetically unappealing, leading to inconsistent use. Addressing these barriers through education, individualized garment selection and ongoing support is essential for achieving long-term success. Advances in textile technology and garment design have improved comfort and appearance, which may enhance patient compliance and outcomes.

Correspondence to: Arkadiusz Jawień, Department of Vascular Surgery and Angiology, Antoni Jurasz University Hospital, Bydgoszcz & Toruń, Poland, E-mail: ark.jawien@jur.uni.po

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CONCLUSION

In conclusion, compression therapy plays a central and indispensable role in the treatment of venous disorders by addressing the underlying problem of venous hypertension. Its ability to relieve symptoms, reduce edema, promote ulcer healing and prevent disease progression makes it a foundational therapy across all stages of chronic venous disease. When combined with patient education, lifestyle modification and, when appropriate, interventional treatments, compression therapy offers an effective, safe and cost-efficient approach to managing venous disorders and improving patient quality of life.

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