

Patient compression compliance: Winning the battle

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Introduction

In patients with incompetent great saphenous veins, pelvic veins, accessory veins, refluxing perforators and venous malformations, and leg ulcers, CVI is often associated with *debilitating* symptoms and complications.

Chronic venous disease (CVD) and (CVI) Chronic Venous Insufficiency is a *major public health issue* carrying a high prevalence.

Despite this, CVD and CVI are largely under-diagnosed and limited choices of efficient, effective, cost effective care is being provided to patients.¹⁻⁷

Anatomic/physiologic consideration

Anatomic/physiologic consideration should include (Figure 1): i) CEAP class, overall health; ii) improve venous return from the lower extremities with venous stasis; iii) counter effects of ambulatory venous hypertension; iv) help control the progression of venous and lymphatic disease by increased contact of skin and dermal tissues with capillaries.

General considerations for winning the battle of patient compliance with compression

Learn about compression. Compression Vendors, National and International Conferences; Use compression yourself; Research Trials with research grants; Smart fabrics, patient monitoring and pressure monitors: embedded and external use.

Methods

Educate and explain clear benefit for compression therapy: i) heal or prevent active venous ulceration; ii) prevention of PTS after DVT; iii) prevention of TE events after surgery when combined with anti-coagulant prophylaxis; iv) reduction of edema and inflammation; v) better cosmetic

outcome (Figure 2).

Technical tips: i) there are many fabrics, styles and colors available, both in ready-to-wear and custom-measured garments; ii) two facts become clear at once: Nothing *fits like skin*, and NO one fabric, style, brand, or type of compression is perfect for every patient (Figure 3).

What did we learn after bandaging, velcro inelastic wraps, flat knit compression, elastic stocking compression?

Adjustable velcro compression devices are more effective than inelastic bandages in reducing venous edema in the initial treatment phase, as described by Mosti *et al.*⁸

Results

Re-adjustable AVCDs with a resting pressure of around 40 mmHg are more effective in reducing chronic venous edema than IBs with a resting pressure of around 60 mmHg. AVCDs are effective and well tolerated, not only during maintenance therapy, and also in the initial decongestive treatment phase of patients with venous leg edema (Figure 4).

What were the venous reflux or leg ulcer recurrences?

GRADE 1B: Strong compression

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hosiery (30-40 mmHg) is more effective than medium or low compression stockings;

Grade 1A: 30-40 mmHg compression hosiery prevents recurrence of ulceration after healing.

Since long-term patient concordance with compression is relatively poor, it may prove more popular, effective and cost-effective to provide a single intervention to reduce recurrence, rather than life-long treatment with compression, as described by Samuel *et al.*⁹

What are the problems and modes of treatment?

Well-performed compression techniques do not guarantee technical success. More commonly, however, recurrent varicose veins can be from non-saphenous sources such as pelvic insufficiency, saphenous tributary incompetence, previously



Figure 1. The spectrum of venous disease.

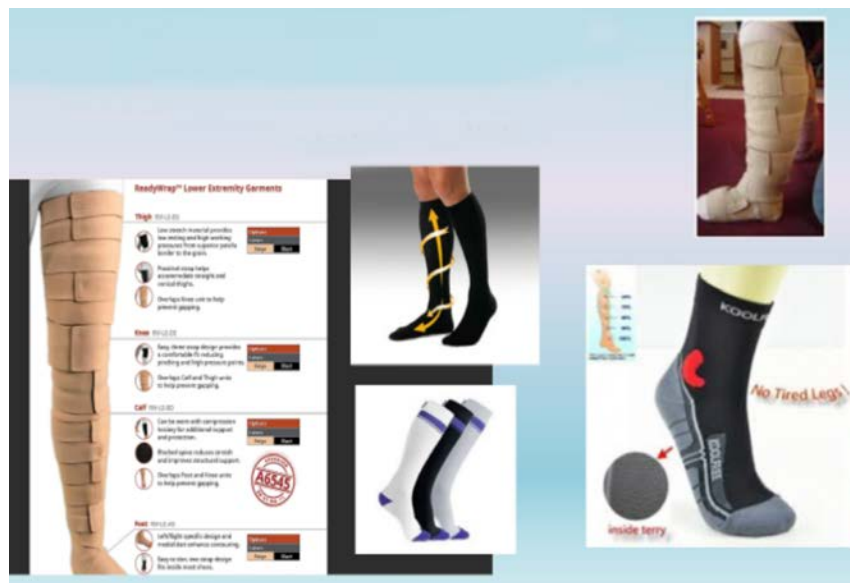


Figure 2. Alternate compression modalities.



Figure 3. Stiff, inelastic, multilayered bandaging.

unknown abdominal or pelvic obstruction, patient non-compliance or simple disease progression.

'Whatever the cause, it is important to bear in mind that control of lower extremity venous incompetence can be achieved, but permanent cure is an unrealistic goal.'

Hugo Partsch

Conclusions

No significant, procedure related, adverse events occurred using donning and doffing methods mentioned, nor from the use of Velcro devices, circular or round knit

stockings, and 4-layer bandaging with inelastic wraps and layered padding options.

The battle can be won if compression reduces patient complaints of cramping, restless legs, ankle or leg swelling, heaviness, inflammation, pain, or recurrent leg ulcers and DVT.¹⁰⁻¹²

Compression is not a punishment, if done correctly, with the patient's involvement and cooperation.

References

1. Kahn SR, Shapiro S, Wells PD, et al.

Compression stockings to prevent post-thrombotic syndrome: a randomized placebo-controlled trial. *Lancet* 2014; 383:880-8.

2. Moffatt C, Kommala D, Dourdin N, Choe Y. Factors that affect concordance with compression therapy. *J Wound Care* 2004;13:291-4.
3. Raju S, Hollis K, Neglen P. Use of compression stockings in CVD: patient compliance and efficacy. *Ann Vasc Surg* 2007;21:790-5.
4. Benigni J-P, Cornu-Thenard A, Uhl J-F. Criteria for non-compliance of medical compression stockings. *Int J Angiol* 2013;22:23-30.
5. Luire F, Kistner RL. Trends in patients reported outcomes of conservative and surgical treatment of primary chronic venous disease contradict current practices. *Ann Surg* 2011;254:363-7.
6. Hamel-Desnos CM, Guias BJ, Desnos PR, et al. Foam Sclerotherapy of saphenous veins: randomized controlled trial with or without compression. *Eur J Vasc Endovasc Surg* 2010;39:500-7.
7. Sell E. Compression therapy versus surgery in treatment of patients with varicose veins - A RCT. *J Vasc Endovasc Surg* 2014 [Epub ahead of print].
8. Mosti G, Cavezzi A, Partsch H, et al. Adjustable velcro compression devices are more effective than inelastic bandages in reducing venous edema in the initial treatment phase: a randomized controlled trial. *Eur J Vasc Endovasc Surg* 2015;1:e7.
9. Samuel N, Carradice D, Wallace T, et al. Endovenous thermal ablation for healing venous ulcers and preventing recurrence. *Cochrane Database Syst Rev* 2013;10: CD009494.
10. Ad A, Hendrickx, Wim P, Krijnen, Robert J, Damstra, Richard Bimmel, Cees P. van der Schans Compression with the Juxta Reduction Kit® (medi) in patients undergoing a total knee arthroplasty *Veins and Lymphatics* 2017; 6:6622 doi:10.4081/vl.2017.6622
11. Joseph A. Caprini Velcro compression devices *Veins and Lymphatics* 2017; 6:6624 doi:10.4081/vl.2017.6624
12. Patrick Carpentier, Jean-François Auvert, Sophie Bensedrine, Sophie Blaise, Chantal Elbhar, Gilles Miserey, Monira Nou for the Compression Interface Group of the Société Française de Médecine Vasculaire Compression therapy in everyday life: let the patients have the floor *Veins and Lymphatics* 2017; 6:6625 doi:10.4081/vl.2017.6625