

# Contraindications, risk factors, adverse events in venous leg ulcer compression therapy – review of clinical practice guidelines

<sup>1</sup>Andriessen A, <sup>2</sup>Mosti G, <sup>3</sup>Partsch H, <sup>4</sup>Gonska C, <sup>4</sup>Abel M

1. Radboud UMC, Nijmegen & Andriessen Consultants, Malden, The Netherlands; 2. Dept of Angiology, Clinica MD Barbantini, 55100 Lucca, LU, Italy; 3. Medical University Vienna, 1090 Vienna, Austria; 4. Medical & Regulatory Affairs, Lohmann & Rauscher GmbH & Co KG, 56579 Rengsdorf, Germany.

## Introduction:

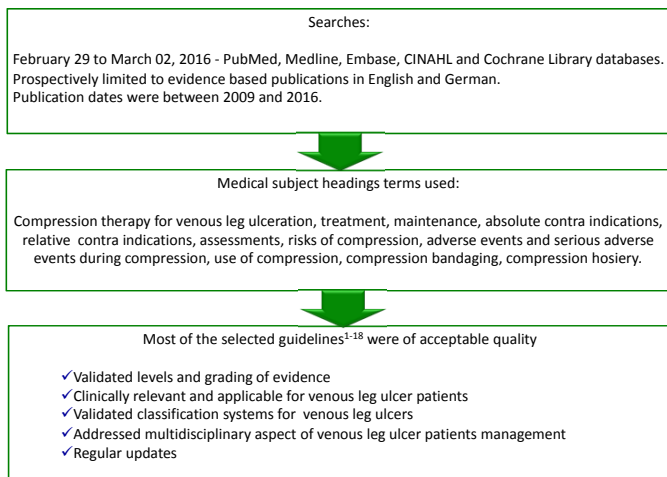
The adequate use of compression in venous leg ulcer treatment is equally important to patients as well as clinicians. Currently there is a lack of clarity on contra-indications, risk factors, adverse events and complications, when applying compression therapy for venous leg ulcer patients.

## Methods:

The project was conceived as a mechanism to optimize prevention, treatment and maintenance approaches by recognizing contra-indications, risk factors, adverse events and complications, when applying compression therapy for venous leg ulcer patients. The project is an initiative of the Patient Outcome Group of the European Wound Management Association in collaboration with the International Compression Club.

A literature review was conducted of current guidelines on venous leg ulcer prevention, management and maintenance, randomized controlled studies, systematic reviews, meta-analysis and well-designed cohort studies (fig 1).

Fig 1: literature review



## Results:

Evidence was obtained from searches, which took place February 29 to March 02, 2016 of PubMed, Medline, Embase, CINAHL and the Cochrane Library databases. Searches were prospectively limited to publications in the English and German languages and publication dates were between January 2009 and February 2016. N = 18 Guidelines, Clinical Pathways and Consensus papers on compression therapy for venous leg ulcer treatment and for venous disease, were included.<sup>1-18</sup>

Guidelines agreed on the following absolute contraindications: arterial occlusive disease, heart failure and ankle brachial pressure index (ABPI) < 0.5.<sup>1-18</sup> There are differences between Europe and the USA on absolute contraindications and relative contraindications.

## Conclusions:

- ✓ Evidence based guidance is needed to inform clinicians on contraindications when providing compression therapy.
- ✓ Complications of compression therapy can almost always be prevented when adequate assessment is performed and clinicians are skilled in applying compression.
- ✓ Effective patient education improves patient outcomes.

## References

1. Leitlinien Deutsche Gesellschaft für Phlebologie: Phlebologischer Kompressionsverband (PKV) 2009 ; 38: 168-171.
2. Kröger K, et al. Consensus recommendation for compression therapy for patients with venous ulcers. EWMA J 2013;13(2):41-47
3. Wilim S, et al. DGP and DeGAM gemeinsam erstellte Kurzfassung zum Ulcus cruris venosum. 2010. [www.degam-leitlinien.de/therapie-des-ulcus-cruris-venosum.html](http://www.degam-leitlinien.de/therapie-des-ulcus-cruris-venosum.html)
4. Ehresmann U, et al. Guideline Deutsche Gesellschaft Phlebologie: [www.phlebologie.de/deutsche-gesellschaft-fur-phlebologie/diagnostik-und-therapie-des-ulcus-cruris-venosum.html](http://www.phlebologie.de/deutsche-gesellschaft-fur-phlebologie/diagnostik-und-therapie-des-ulcus-cruris-venosum.html)
5. Rabe S, et al. Guideline for clinical studies with compression devices in patients with venous disorders. Eur J Vasc Endovasc Surg. 2008 Apr;35(4):494-500.
6. O'Donnell TF, et al. Management of venous leg ulcers; Clinical practice guidelines of the society for vascular surgery and the American venous forum. J Vasc Surg 2014;60:35-59S
7. Neumann HAM, et al. European Dermatology Forum S3 guideline for diagnostics and treatment of venous leg ulcers. EDF guidelines leg ulcers/ version 4.0. 2014
8. AAWC Venous Ulcer Guideline. Malvern, Pennsylvania: Association for the Advancement of Wound Care (AAWC) December 2010 (<http://aaonline.org/professional-resources/resources/>).
9. Wittens CDAH, et al. Clinical Practice Guidelines of the European Society for Vascular Surgery (ESVS). Eur J Vasc Endovasc Surg 2015; 49, 678e737.
10. SIGN Management of chronic venous leg ulcers: a national clinical guideline. Edinburgh: NHS Quality Improvement Scotland; 2010. [www.sign.ac.uk/pdf/sign120.pdf](http://www.sign.ac.uk/pdf/sign120.pdf)
11. Australian and New Zealand Clinical Practice Guideline for Prevention and Management of Venous Leg Ulcers. The Australian Wound Management Association Inc. and the New Zealand Wound Care Society Inc., 2011. Osborne Park: Cambridge Publishing; 2011. [www.awma.com.au/publications/2011\\_awma\\_vlug.pdf](http://www.awma.com.au/publications/2011_awma_vlug.pdf)
12. Weller C, Evans S. Venous ulcer management in general practice – practice nurses and evidence based guidelines. Aust Fam Physician. 2012 May;41(5):331-7. [www.nzwc.org.nz](http://www.nzwc.org.nz)
13. Guideline for management of wounds in patients with lower-extremity venous disease, O. Mount Laurel (NJ): Wound, and Continence Nurses Society (WOCN), Editor. 2011.
14. TVS clinical practice guideline: 2011 LU prevention and management
15. Schweitzer BPM, Doornbosch J, Glotzbach R, et al. Dutch college of GP (NHG) practice guidelines. 2014 May 19;29(1 suppl):153-156.
16. Assenheimer B, Augustin M, Braunwarth H, et al. Consensus recommendations for compression therapy for patients with venous ulcers : EWMA Journal 2013 VOL 13 NO 2. 41
17. Simms KW, Emmen K. Lower extremity ulcer management: best practice algorithm. J Clin Nurs. 2010;20(12):86-93.
18. Franks P, et al. Management of patients with venous leg ulcers, challenges and current best practice. JWC 2016; 25 (6) EWMA position doc.

Table 1: Type of publications

Type of publications	Publication dates	No
Guidelines and consensus papers on venous leg ulcers <sup>1-18</sup>	2008 until 2016	18
Guidelines and consensus papers on Lymphedema		1
Guidelines and consensus papers on thromboembolism prophylaxis and treatment	2010 until 2011	3
Intermittent compression	2005 updated 2010	1
Varicose veins	2013	1
<b>Total</b>		<b>24</b>

Table 2: Contraindications

Absolute contraindications	No	Relative contraindications	No	Contraindication without classification	No
Arterial occlusive disease	18	Diabetes mellitus; peripheral neuropathy	18	Heart failure	3
Heart failure	18	Heart failure	8	Neuropathy	3
ABPI < 0.5-0.8	18	Compensated peripheral arterial occlusive disease	6		
Extensive thrombophlebitis, thrombosis or suspected thrombosis	7	Intolerance to dressing material / allergies	7	Extensive thrombophlebitis, thrombosis or suspected thrombosis	2
Phlegmasia coerulea dolens	6	Skin diseases	6	Erysipelas	2
Erysipelas		Malignant diseases	5	Serious non-controlled hypertension	2
Serious non-controlled hypertension	4	ABPI < 0.5-0.8	4		

Table 3: Risks and Adverse Events

Risk & adverse effects	no	Complications	no
Pressure marks; necrosis; friction; leg ulcer	18	Tissue damage; necrosis; friction; leg ulcer; gangrene	11
Injury to the skin	12	Allergy; skin irritation	6
Pain	10	Pain	6
Local damage on the peroneus nerve; peripheral nerves	6	Constrictions	2
Wrong compression pressure	4	Arterial complication	2
Allergic reaction; skin irritation	4		
Lack of medical efficacy	2		
Genital lymphedema	2		
Limb shape	2		
Deterioration of wounds; skin	2		
Constriction	2		
Thrombosis	2		