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Knowledge Management

Compression Bulletin 09
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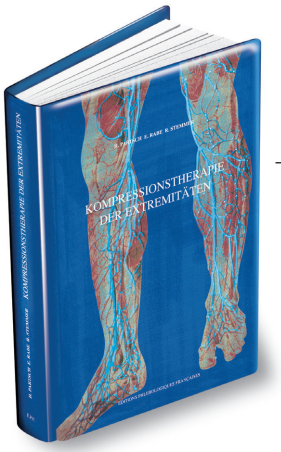
Robert Stemmer Library on Compression Therapy



Compression Therapy of the Extremities

This book, available in English, French and German, contains the most complete collection of compression references.

Continuous literature update

Scientific articles on compression therapy worldwide are collected and quoted on Internet **www.sigvaris.com**

Compression Bulletin

A selection of some interesting articles is extracted and discussed in the Compression Bulletin (available by fax or e-mail).
It is translated into following languages: Chinese, English, French, German, Italian, Japanese, Portuguese, Russian, Spanish, Turkish.

Table of contents:

1) Introduction
2) Historical overview
3) Anatomy
4) Venous return
5) The basis of compression
6) Mobilization
7) Compression using mechanical devices
8) Bandages
9) Compression stockings
10) Compression & mobilization strategies

Identical chapter-titles in the continuous literature update and in the Compression Bulletin

Special issue: Rio UIP 2005

Foreword

This issue of the Compression Bulletin contains interesting data concerning the prescription of medical compression stockings after deep vein thrombosis (DVT) in different countries. Susan Kahn and co-workers from Montreal published the results of a Canadian survey in which doctors and patients had been interviewed on their practices and perceptions regarding the use of compression stockings after DVT. As you can see in the first abstract of this issue the acceptance of compression therapy by the colleagues was surprisingly low. In general physicians highly underestimated the degree of patients' compliance.
The authors kindly allowed us to translate their original questionnaire for the prescribers into different languages and to distribute it by Compression Bulletin among colleagues worldwide.

318 questionnaires were returned and an analysis of the international results has been published recently, summarized in the second abstract. The discrepancies between the varying concepts among the different countries clearly shows that a lot of work still has to be done to prove the clinical benefits of compression and to convince and educate doctors in this underestimated field of therapy. The two abstracts also demonstrate that Compression Bulletin may be a useful platform for an international exchange of ideas.

Enjoy reading,
the Editors

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Kahn SR, Elman E, Rodger MA, Wells PS

Use of elastic compression stockings after deep venous thrombosis: a comparison of practices and perceptions of thrombosis physicians and patients.

Journal of Thrombosis and Haemostasis 2003;1:500-06

Aim of this report was to evaluate the perception of physicians and patients regarding the use of compression stockings after deep vein thrombosis (DVT).

Methods:
Two surveys were conducted. A questionnaire was sent to 38 Canadian thrombosis physicians who had prescribed elastic compression stockings (ECS) in their practices. Another questionnaire was administered to 80 DVT patients attending Thrombosis Clinic at one of two Canadian university-affiliated hospitals. The time range after DVT was between 2 months and 12 years (median 14 months).

Results:
Physicians survey:
68% of the physicians prescribed stockings only if venous signs and symptoms were present, 32% did this as a routine. 78% prescribed ECS regardless of the site of DVT while 22% prescribed stockings only in proximal and more severe DVT (knee-length in 70% and thigh-length in 30%). 3% chose light-weight stockings (<20 mmHg), 44% chose class I stockings (20–30 mmHg), 50% class II (30–40 mmHg) and 3% class III (40–50 mmHg).
26% recommended compression as soon as DVT was diagnosed , 3% 1–2 days after DVT treatment was initiated, 26% within the month after DVT was diagnosed, 3% three months after DVT, 24% when acute symptoms of DVT improved or resolved and 18% when symptoms developed or became chronic.
Physicians estimated that 50% of patients wear compression stockings daily, 30% occasionally and that 20% would never wear them. Most important reasons for non-compliance were thought to be discomfort (74%), hard to put on (71%), and expensive (53%).

Patients survey:
Daily use was reported in 87%, once or twice weekly by 3%, less than once a week by 6% and never or rarely by 4%. The main reasons for non-regular use were difficulty putting them on (60% of users) and discomfort (67% of non-regular users). Two thirds of patients found that ECS improved their leg swelling. With regard to overall effects compression stockings made the leg completely better in 4%, a lot better in 31%, a little better in 40%, worse in 4% and had no effect in 21%. Only 18% of patients with distal DVT reported that ECS made their leg better, compared with 49% of those with proximal DVT.

Conclusion:
Although two-thirds of the physicians thought ECS could prevent postthrombotic syndrome, only one third routinely prescribed them. The physicans underestimated the rate of patients' compliance. DVT patients appear to purchase ECS despite their costs (median 100 USD per pair), tolerate them well, and most are willing to wear them.

Comment:
The result of this very interesting paper shows that doctors are obviously much less convinced about the efficacy of compression stockings than the users. The authors explain this discrepancy by two points: 1. the paucity of convincing data, and 2. by the perception that patients will not wear the prescribed stockings. For European phlebologists it is amazing to note that existing data on the efficacy of compression already in the acute stage of DVT are unknown and that only 26% of the Canadian doctors start compression as soon as DVT is diagnosed. Those 24% starting ECS only after improvement or resolution of the acute symptoms of DVT had obviously never experienced the immediate pain reliefing effect of good compression especially during the first days of treatment.
It may be concluded that the knowledge of most physicians on compression therapy is rather poor and that more educational activities will be needed to improve this situation in the future.

Survey
Chapter 10
Literature: 20 / 2
Language: English
Sum.: Eng.

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Knowledge Management COMPRESSION **Bulletin 09**

Partsch B, Pannier F, Partsch H, Rabe E

Use of Compression Stockings after Deep Vein Thrombosis in an International Survey – Results from a questionnaire

(Kompressionsstrümpfe nach tiefer Beinvenenthrombose im internationalen Vergleich – Ergebnisse einer Fragebogenumfrage)

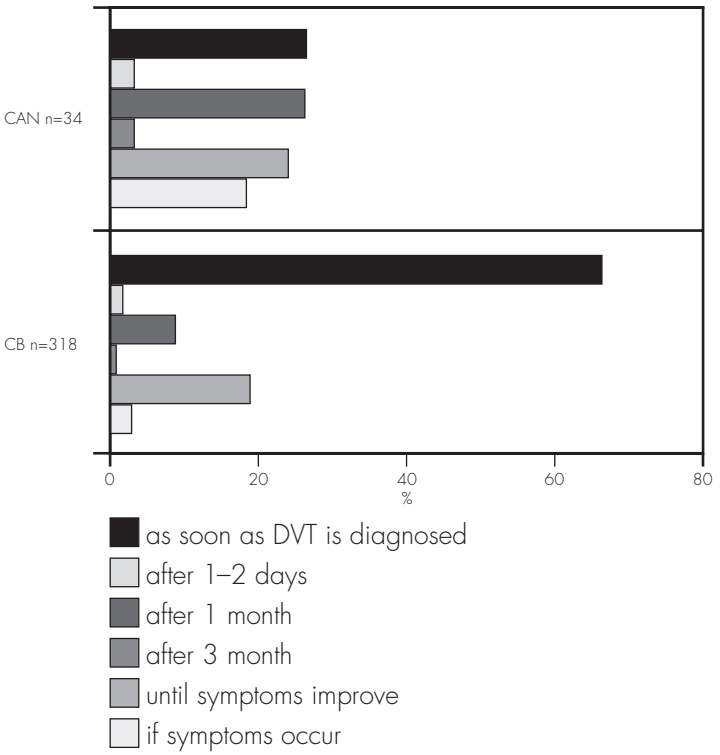
Vasomed 2005; 17(3): 82 – 87

Background:
Compression therapy after deep vein thrombosis is not used everywhere as a standard. In the national guidelines compression after DVT is proposed inhomogenously.

Material and Methods:
Analysis of the use of compression stockings after deep vein thrombosis by an international questionnaire survey. A Canadian questionnaire that had been previously sent out, evaluated and published was translated with permission of the authors and sent to the subscribers of the "Compression Bulletin by Fax". The answers of 318 colleagues from 20 countries, mostly European, were analysed.

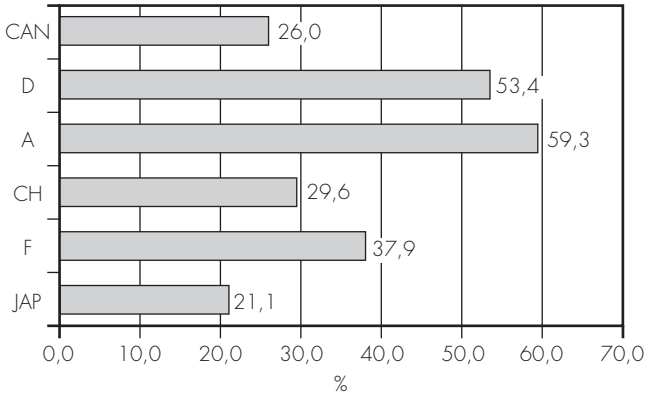
Results:
While in Canada only 26% of physicians prescribed stockings in the acute phase of deep vein thrombosis, the frequency in our series was 65,7% (Figure. 1).

Figure 1:
Answers to the question: "When do you recommend patients start wearing stockings"
(CAN = Canada, CB = Questionnaire Compression Bulletin)



The duration of treatment was mainly between 6 and 24 months, 45,9% recommended prolonged compression therapy (Figure 2).

Figure. 2:
Recommendation for continuous wearing of compression stockings



More than half of the physicians use knee length stockings. Thigh length compression-stockings and panty hoses are mainly used in France. 73,3% use stockings of compression class II, 75% of the french colleagues prescribe stockings of compression class I. Main reasons for prescribing compression stockings are: improvement of symptoms and oedema, prevention of postthrombotic syndrome and recurrence as well as treatment of postthrombotic sequelae. Positive compliance of continuous use of stockings is expected by more than 80% of doctors. The colleagues believe that the main reasons for not wearing the stockings are the difficulty in applying the stockings and unpleasant feelings by the patients (Table.1).

Conclusions:
Most of the physicians prescribe and encourage compression stockings after deep vein thrombosis.

Comment:
In two prospective randomized studies a marked reduction of the incidence of postthrombotic syndrome by compression therapy after DVT could be demonstrated (Brandjes DP et al, Lancet 1997; 349: 759-762, Prandoni P et al, Pathophysiol Haemost Thromb 2002; 32 [suppl 2]:72). In addition Partsch und Blättler could show reduction of complaints by compression in the acute phase of DVT (Partsch H, Blättler W, J Vasc Surg 2000; 32:861-869, Blättler W, Partsch H, Int. Angiol. 2003;22:393-400). Nevertheless compression therapy is not used routinely in DVT.

Table 1:
Estimation from the physician of effect and compliance of compression therapy:

	CAN (%)	CB (%)*
Compliance: daily worn	50	81
occasionally worn	30	12
never worn	20	1
Benefit: symptom control	94	74
Edema control	94	83
Reasons for Non-Compliance: discomfort	74	73
difficult to put on	71	79
expensive	53	8
do not help	47	4
do not look good	38	15
make leg worse	29	6

*partly multiple or missing answers

Questionnaire
Language: German
Abstract: English, French
Literature: 10 / 1
Chapter: 10

Wienert V, Partsch H, Gallenkemper G, Gerlach H, Jünger M, Marshall M, Rabe E

Guideline intermittent pneumatic compression

(Leitlinie Intermittierende pneumatische Kompression)

Phlebologie 2005; 34: 176 - 180

Background:
Intermittent pneumatic compression (IPC) means the application of intermittent pneumatic pressure devices for thromboprophylaxis, venous and lymphatic diseases and for the improvement of the arterial circulation In the different indications different devices are available. In this guideline the evidence for the effectiveness of IPC in the different indications was evaluated based on the available prospective randomised comparative studies.

Material and Methods:
61 prospective randomised comparative studies could be found for the indications thromboprophylaxis, postthrombotic syndrome, leg ulcers, chronic venous insufficiency, lymphoedema and peripheral arterial occlusive disease.

Results:
In thromboprophylaxis there is a good evidence for the reduction of thromboembolic events by IPC alone or in combination with heparin prophylaxis. IPC is an additional therapy and improves the healing rate of venous leg ulcers and the symptoms of severe postthrombotic syndrome. In secondary arm lymphoedema it reduces oedema and has a positive effect in addition to manual lymphatic drainage. In leg lymphoedema multi-chamber systems are more effective than single-chamber systems. In patients with symptomatic arterial occlusive disease IPC improves the painless walking distance. Contraindications are decompensated cardiac insufficiency, severe thrombophlebitis or deep venous thrombosis as well as bacterial infection and severe arterial hypertonia. Only single case publications are available for possible side effects like peroneal nerve damage.

Conclusions:
Using the methods of evidenced based medicine the effectiveness of IPC could be demonstrated for the indications thromboprophylaxis, severe chronic venous insufficiency with or without venous ulcers and arterial occlusive disease. For lymphoedema positive effects of IPC could be shown with IPC alone or in combination with manual lymph drainage.

Comment:
In the past the effectiveness of IPC, especially in the indications venous ulcers, arterial occlusive disease and lymphoedema were discussed controversialy. The review of the available prospective randomised controlled studies shows a wide field of proven effectiveness for this method.

Guideline
Language: German
Literature: 61 / 0
Chapter: 7

Partsch H, Kaulich M, Mayer W

Immediate mobilisation in acute vein thrombosis reduces post-thrombotic syndrome.

Int Angiol 2004;23:206-12

Background:
It had been shown that immediate mobilisation of patients with acute deep vein thrombosis (DVT) using good compression is able to reduce pain and swelling more effectively than bed rest[1]. A potential benefit concerning the reduction of the frequency and severity of a postthrombotic syndrome (PTS) was not yet established.

Methods:
53 patients with acute proximal DVT who had been enrolled in a randomised controlled trial comparing bed rest versus mobilization using bandages or class II stockings (Sigvaris 503) were invited for a follow up investigation more than two years later. All patients in the acute stage received therapeutic doses of low molecular weight heparin (LMWH) (200 IU Dalteparin/kg body weight/24 h)[2]. 37 patients could be reinvestigated, 26 from the originally mobile group (bandages or stockings), 11 from the bed rest group. Like in the initial study Duplex was performed, measurements of the leg circumferences were taken and pain was assessed by visual analogue scale and by Lowenberg test. Additionally the Villalta-Prandoni PTS-score was used combining 5 subjective symptoms and 6 objective signs. A score less than 5 means "no PTS", a score between 5-14 "mild PTS"[3].

Results:
Duplex did not reveal a significant difference between the treatment groups.
Based on clinical scoring no patient had a severe PTS (score >15).
18/26 patients from the group that was primarily mobilized with compression had no PTS, but from the bed rest group only 2/11 patients had a score <5. The mean score for the mobile compression group was 5,1, for the bed rest group 8,2 ($p<0,01$).
9/11patients from the bed rest group, but only 16/26 from the mobile groups showed a larger circumference on the diseased leg.
Those patients from the mobile group who still wore their compression stockings at the time of the follow up investigation (13/26) showed less swelling than those who did not continue the use of stockings for longer than 1 year. The bed rest group presented with leg swelling in nearly all cases (8/11), even in those who still wore their stockings.

Conclusion:
Immediate mobilisation with compression in the acute stage of proximal DVT together with optimal anticoagulation using LMWH helps to prevent thrombus growth in the first hours, which has a deciding influence on the late outcome and therefore reduces the incidence and the severity of PTS.

Comment:
Concerning the wearing of compression stockings during the following months after DVT two practical consequences may be derived from this study:
1. There is less swelling of the thrombosed leg when the stockings are worn two years after DVT compared to one year or less.
2. Most of those patients who obviously need compression stockings because of pronounced residual swelling are using them.

Language: English
Abstract: English
Literature: 24 / 2
Chapter: 10

1 Partsch H, Blättler W. Compression and walking versus bed rest in the treatment of proximal deep venous thrombosis with low molecular weight heparin. J Vasc Surg 2000:32:861-9
2 Blättler W, Partsch H. Leg compression and ambulation is better than bed rest for the treatment of the symptoms of acute deep vein thrombosis. Int Angiol. 2003;22:393-400
3 Villalta S, Bagatella P, Piccioli A et al. Assessment of validity and reproducibility of a clinical scale for the post-thrombotic syndrome. Haemostasis 1994;24:158a

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