

Robert Stemmer Library on Compression Therapy

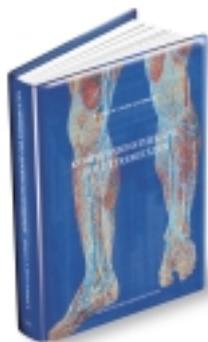


Table of contents:

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

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

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)

Goldman MP.

How to utilize compression after sclerotherapy

Dermatol Surg 2002;28:860-62

Background

Only few studies address compression following sclerotherapy of teleangiectatic webs associated with reticular veins.

Methods

A literature survey is given and the personal technique of the author is described

Results

Based on findings from the literature compression is able decrease thrombus formation after sclerotherapy, thus decreasing the risk of recanalization of the treated vessel. The incidence of postsclerosis pigmentation is diminished. Graduated compression stockings exert their primary effect on the superficial venous system while inelastic compression has a significant effect on deep venous hemodynamics. Compression stockings are therefore preferred after sclerotherapy. A randomised controlled trial has demonstrated beneficial effects of compression following sclerotherapy of teleangiectasias associated with reticular veins. The best outcome was observed with compression for 3 weeks, but compression for as little as 3 days had showed also some benefit.

The personal technique of the author begins always with treatment of the reticular veins and finishes with treatment of the distal teleangiectasia. Using sclerosing agents of appro-

appropriate strength the treated vein will go into spasm and therefore immediate compression of the treated area is not utilized. A typical sclerotherapy session takes 10-15 minutes and is performed only on one leg. The nurse rubs a superpotent corticosteroid onto all treated areas and then a graduated compression stocking is applied while the patient is lying flat. The high-high stocking is left in place for 7 days and 7 nights. The patient is able to shower by applying a plastic cover to the stocking.

Conclusion

Graduated compression stockings are recommended after sclerotherapy of teleangiectatic webs with reticular veins

Review
Chapter 10
Lit. 11/6
Lang.: ENG
Sum.: ENG

Editors

Prof. H. Partsch, Wien
Prof. E. Rabe, Bonn

Co-Editors

Dr. Pannier-Fischer, Bonn
Dr. B. Partsch, Wien

International Advisory Board

Asia – S. Hoshino
Australia – G. M. Malouf
Europe – F. Vin
North America – L. Villavicencio
South America – E. Brizzio

GANZONI & CIE AG
Gröblistrasse 8
CH-9014 St.Gallen
Tel. +41 (0)71 279 33 66
Fax +41 (0)71 274 29 75

GANZONI FRANCE SA
F-68308 St.Louis
Tel. +33 (0)3 89 70 2400
F-42176 StJust-St-Rambert
Tel. +33 (0)4 77 36 08 90

GANZONI
Improving quality of life
SIGVARIS
www.sigvaris.com

Benigni JP, Sadoun S, Allaert FA, Vin F.

Comparative study of the effectiveness of class 1 compression stockings on the symptomatology of early chronic venous disease

Phlébologie 2003 ;56 :117-25

Background

The clinical efficacy of class 1 compression stockings (10-15 mmHg at the ankle) is still a matter of controversial dispute.

Aim

To compare class 1 stockings with identically looking, «non-active» stockings (pressure < 7mm Hg) in patients with early stages of venous disease.

Material and Methods

125 patients with CEAP stages C1-C3, S Ep As1-5 were enrolled into this randomised multicentre cross-over study. Group 1 received non-active stockings, group 2 class 1 stockings. After 2 weeks there was a "wash-out phase" of 1 week. Thereafter group 1 got the class 1 stockings and group 2 the non-active stockings. In total 111 patients could be followed up to 35 days. Primary endpoint of the study was the subjective pain measured by a visual analogue scale (VAS) on day 0, 14, 21 and 35. Secondary endpoints were heaviness, cramps, paraesthesias and complaints regarding congested calves, assessed at the same time intervals. Leg circumference and venous refilling time using D-PPG were measured and the patient filled out a questionnaire with self evaluation including QOL on a daily basis.

Results

Statistically highly significant differences in favour of the class 1 stockings were found for pain, for all other parameters of discomfort except paraesthesia and for the QOL dimensions

mood and every day work. The relief of symptoms that resulted from the use of the class 1 compression stockings was twice that which resulted from the use of the reference stockings. No significant differences could be obtained for leg circumference and venous refilling time. Compliance was excellent (95%) and tolerance was greater for the class 1 stockings than with the control stockings.

Conclusion

Compression stockings class 1 (10-15 mmHg) worn for 2 weeks lead to a significant improvement of pain and discomfort in patients with early stages of venous disease.

Comment

This study concentrating on subjective symptoms like pain and discomfort in patients with mild objective signs of chronic venous disease shows very impressively a beneficial effect of medical support stockings (French class 1 stockings) in contrary to non-active control stockings. It has to be underlined that the active stockings with a pressure of 10-15 mmHg correspond to the French class 1, which is «compression class A» according to the CEN regulation. (CEN= Comité Européen de Normalisation, Adopted European pre-standard, Ratification 2001-06-23)

Chapter 9

Lit. 16/0

Lang.: FR

Sum.: FR/ ENG

Kolbach DN, Hamulyák K, Neumann HAM, Prins MH

Therapy of acute deep vein thrombosis and prevention of the post-thrombotic syndrome.

Phlebologie 2003 ;32 :45-9

Background

There is a considerable amount of uncertainty among treating physicians concerning the strategy of compression and mobilisation in the acute phase of deep vein thrombosis (DVT) and the value of this management for the prevention of postthrombotic syndrome.

Aim

Evaluation of a questionnaire which was mailed to all dermatologists (n=324) in the Netherlands.

Material and Methods

The response rate was 81%. From the responding dermatologists 191 (73%) were involved in phlebology. Their responses were used for further analysis. 93 referred patients suspicious of DVT to other specialists, 98 performed diagnostic procedures themselves, most of them (93) using duplex. 91%

indicated that treatment of DVT in the acute stage was initiated by internists.

Results

134/191 dermatologists (70 %) administer compression therapy in the acute stage of DVT, 78 of those who initiate also the diagnosis and 56 who do not. In the acute phase compression therapy mostly consisted of compression bandages. The majority preferred early ambulation. As indications for bed rest DVT of the pelvic region, common femoral vein and pulmonary embolism were mentioned.

For maintenance therapy knee length compression stockings were prescribed by 39%. 3 % gave always thigh-length stockings and 58% prescribed both lengths. 54% used flat-knitted class III stockings, 15% flat-knitted class II stockings. Circular-knitted class II stockings were used by 11% and circular-knitted class III stockings by 18%. Concerning the peri-

od of stocking wear 40% advised to apply stockings for 12-24 months, 27% for more than 24 months, 22% for 6-12 months.

Discussion

Home-therapy of DVT using low molecular weight heparin has become popular. However, there is a risk of overlooking the danger of postthrombotic syndrome, when no special advises are given concerning compression and walking. In a recent survey of the management of DVT in general practice in the Netherlands compression therapy was not even mentioned as a part of the treatment strategy.

Conclusion

Dermatologists are aware of the beneficial effects of compression therapy and should therefore be involved in the care of ambulant patients, both in the acute stage of DVT and also during the follow-up period.

Chapter 9

Lit: 18/0

Lang.: ENG

Sum.: ENG/FR /DT

Iwama H, Furuta S, Ohmizo H

Graduated compression stocking manages to prevent economy class syndrome

Amer J Emergency Medicine 2002;20:378-80

Aim To elucidate the pathogenesis of traveller's thrombosis by investigating rheological changes in the veins of the lower legs after sitting.

Material and methods

In 10 healthy volunteers, 8 males, 2 females, mean age 28 ± 7 years, blood samples were taken from the cubital vein and from the great saphenous vein at the ankle before and 2 hours after quiet sitting bound to a chair by a rope. Thigh length compression stockings (Comprinet Pro) were fitted to one leg. Activated coagulation time (ACT) (seconds), haematocrit (Ht) (%) and lactate (mmol/l) were measured.

Results

There was a statistically significant increase of Ht and a decrease of ACT in the leg without compression, but no change in the arm and in the leg fitted with the stocking. All volunteers complained of numbness and hypesthesia in both legs.

Discussion

ACT is taken as a parameter for blood coagulability, lactate as an index for ischemia. Graduated compression stockings prevented haemoconcentration and increased coagulability but did not influence the lactate level in the leg veins. It is speculated that "the principle cause of economy class syndrome is attributed to the immobile sitting posture causing arterial compression." The essential pathogenesis is "dependant on this associated ischemia or reperfusion". This phenomenon is

believed to be also the main cause for numbness and hypesthesia, which is also experienced after the Japanese sitting «Seiza».

Conclusion

Graduated compression stockings may prevent economy class syndrome. "Appropriate movement or exercise to release the arterial compression may be the most promising prophylaxis for this syndrome".

Comment

The experimental setup resembles rather Japanese tortures than real flight conditions. However, the measured haemoconcentration in the leg veins after sitting is an important finding of considerable relevance. The cause for this haemoconcentration, which is not discussed in the paper, is obviously the imbalance of Starling's equilibrium with an increased fluid filtration leading to the well known ankle swelling after prolonged sitting. Compression stockings may reduce this oedema formation thereby preventing local haemoconcentration as this is nicely demonstrated in the article. The prevention of local haemoconcentration is an essential mechanism concerning thromboprophylaxis.

Experimental study

Chapter 10

Lit: 10/5

Lang.: ENG

Sum.: ENG

Rabe E, Pannier-Fischer F, Bromen K, Schuldt K, Stang A, Poncar Ch, Wittenhorst M, Bock E, Jöckel KH
Bonn Vein Study of the German Society of Phlebology

Epidemiological study to investigate the prevalence and severity of chronic venous disorders in the urban and rural residential populations.

Phlebologie 2003; 32: 1-14

Introduction

The Bonn Vein Study investigated the prevalence of chronic

venous disorders in the German urban and rural residential population.

Materials and Methods

The study was conducted with individuals of a simple random sample of the inhabitants registry of Bonn and two rural townships aged between 18 and 79 years between 13.11.2000 and 15.3.2002. At total 3.072 persons took part. The overall response proportion was 59 %.

Results

A history of leg swelling was reported by every 6th man (16.2 %) and almost by every second woman (42.1 %). Every 6th person reported recent uni- or bilateral leg swelling in the last four weeks. This is equivalent to 14.8 % (7.9 % of the men, 20.2 % of the women.). Every second person (56.4 %) reported having typical symptoms of vascular disorders within the past four weeks.

The assessment of clinical severity according to the CEAP classification was conspicuous insofar as only 9.6 % of the subjects showed no venous changes (C0). 59 % had isolated teleangiectatic or reticular veins (C1) and 14.3 % varicose veins without any further signs of chronic venous insufficiency (C2). It is noteworthy that 13.4 % had pretibial oedema associated with venous changes at examination (C3). In contrast, the number of signs of advanced chronic venous insufficiency

amounted only to 3.3 % (C4). The prevalence of florid or resolved crural ulcers was 0.7 % (C5+6).

22.9 % of the subjects reported a specific phlebological therapy in history. In the age-group between 70-79 years this figure reached 42.1% (tab. 1). Compression stockings were used by 7.5 % of the men and by 20.3 % of the women (tab. 2).

Comment

Every 6th man and every 5th woman have chronic venous insufficiency. The data shows that venous disorders are still highly prevalent, but that the severity of chronic venous insufficiency has diminished over the past 20 years. This may be caused by increased diagnostic and therapeutic attempts. Medical compression stockings play the most important role in specific phlebological therapy.

Epidemiology

Chapter 8+9

Lit: 17/0

Lang.: German

Sum.: German, English, French

Tab. 1: Specific phlebological therapy, divided in age pattern

	Specific Phlebological Therapy				Total
	Yes		No		
	Number	%	Number	%	
18 – 19	3	4.8	59	95.2	62
20 – 29	29	8.1	330	91.9	359
30 – 39	97	15.8	516	84.2	613
40 – 49	117	18.9	502	81.1	619
50 – 59	140	26.4	391	73.6	531
60 – 69	181	32.3	379	67.7	560
70 – 79	138	42.1	190	57.9	328
Total	705	22.9	2367	77.1	3072

Tab. 2: Specific phlebological therapy

	Total n	(%)	Men n	(%)	Women n	(%)
Surgery	212	(6.9)	61	(4.5)	151	(8.8)
Sclerotherapy	168	(5.5)	23	(1.7)	145	(8.4)
Compression Bandages	180	(5.9)	38	(2.8)	142	(8.2)
Compression Stockings	450	(14.6)	101	(7.5)	349	(20.3)
Oral Venous Drugs	212	(6.9)	45	(3.3)	167	(9.7)
Local Venous Drugs	230	(7.5)	52	(3.9)	178	(10.3)

Fax registration „COMPRESSION Bulletin“

Please send me your COMPRESSION Bulletin regularly, free of charge

Name: _____

First name: _____

Speciality: _____

Institution: _____

Street: _____

Town/zip: _____

Country: _____

My Fax N° is: _____

My e-mail address is: _____

Fax +41 (0)71 274 29 75

Editors

Prof. H. Partsch, Wien
Prof. E. Rabe, Bonn

Co-Editors

Dr. Pannier-Fischer, Bonn
Dr. B. Partsch, Wien

International Advisory Board

Asia – S. Hashino
Australia – G. M. Malouf
Europe – F. Vin
North America – L. Villavicencio
South America – E. Brizzio

GANZONI & CIE AG
Gröblistrasse 8
CH-9014 St.Gallen
Tel. +41 (0)71 279 33 66
Fax +41 (0)71 274 29 75

GANZONI FRANCE SA
F-68308 St.Louis
Tel. +33 (0)3 89 70 2400
F-42176 St-Just-St-Rambert
Tel. +33 (0)4 77 36 08 90


Improving quality of life
SIGVARIS
www.sigvaris.com