

EWMA 2019

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OTHER COLLABORATORS:



ACW: review of the published data

Giovanni Mosti
Lucca; Italy

Adjustable Compression Wraps published data

data come from just one ACW:

- pressure maintenance overtime
- venous, pitting edema
- lymphedema
- venous leg ulcers

venous, pitting, edema

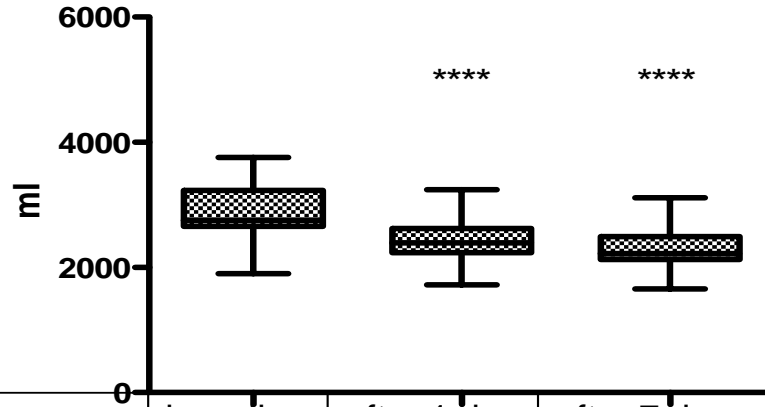
36 patients (40 legs) with venous edema were randomly treated by inelastic bandages applied with full stretch and ACW

- inelastic bandage for 1 week; subsequently the patients were moved to a knee length stocking adjusted to the reduced leg size
- ACW (CircAid[®]) was used all period long

Mosti G 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;50:368-74.

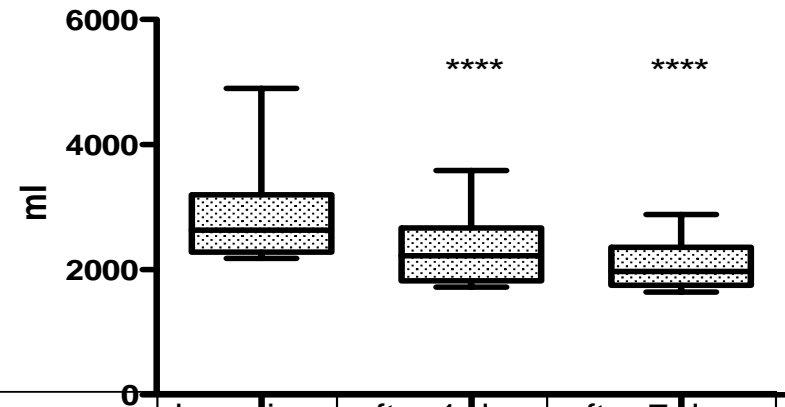
venous, pitting, edema; results: volumetry

volume IB



	baseline	after 1 day	after 7 days
Minimum	1903	1724	1657
25% Percentile	2655	2240	2130
Median	2750	2393	2221
75% Percentile	3232	2620	2493
Maximum	3755	3240	3110
Mean	2854	2437	2295
Std. Deviation	445.2	370.4	346.6
Std. Error	99.54	82.83	77.51

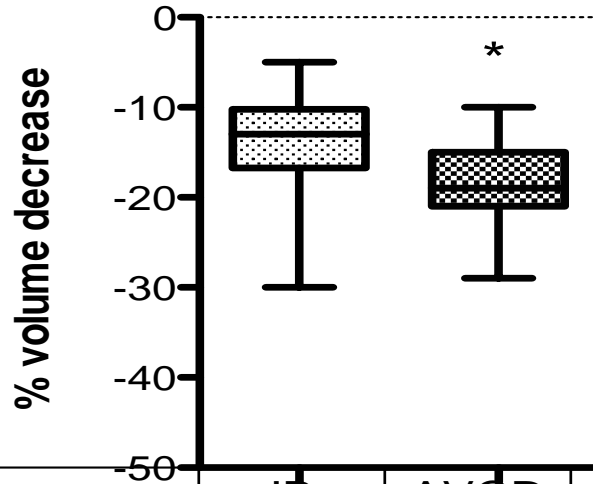
volume AVCD



	baseline	after 1 day	after 7 days
Minimum	2180	1720	1644
25% Percentile	2281	1822	1754
Median	2631	2223	1970
75% Percentile	3200	2665	2358
Maximum	4897	3585	2883
Mean	2838	2296	2077
Std. Deviation	697.2	498.2	366.0
Std. Error of Mean	155.9	111.4	81.84

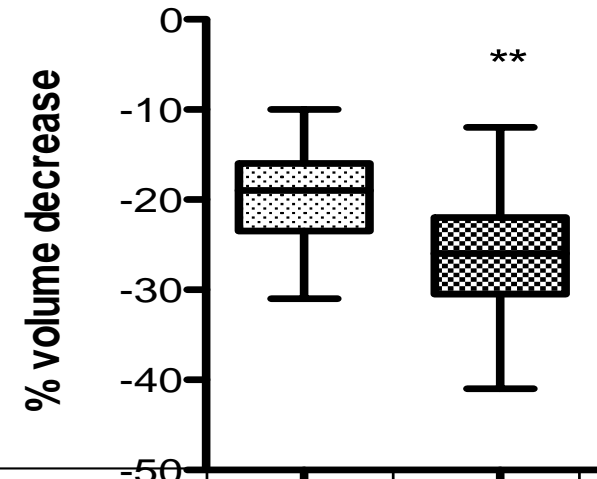
venous, pitting, edema; results: volumetry

% oedema reduction after 1 day



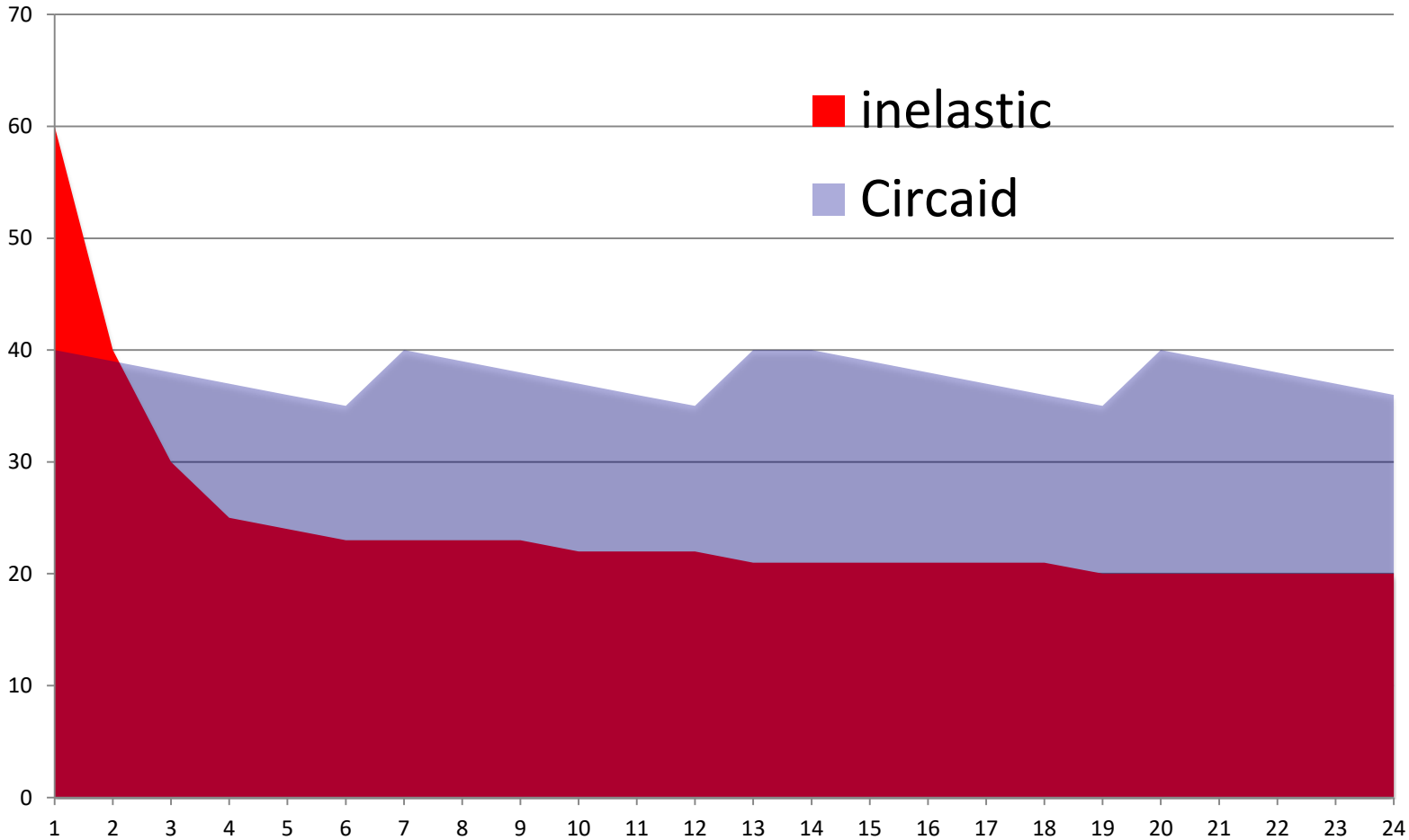
	IB	AVCD
Minimum	-30.00	-29.00
25% Percentile	-16.75	-21.00
Median	-13.00	-19.00
75% Percentile	-10.25	-15.00
Maximum	-5.000	-10.00
Mean	-14.30	-18.70
Std. Deviation	6.182	5.202
Std. Error	1.382	1.163

% oedema reduction after 1 week



	IB	AVCD
Minimum	-31.00	-41.00
25% Percentile	-23.50	-30.50
Median	-19.00	-26.00
75% Percentile	-16.00	-22.00
Maximum	-10.00	-12.00
Mean	-19.76	-25.95
Std. Deviation	6.156	7.871
Std. Error	1.343	1.718

venous, pitting, edema; results: interface pressure



leg lymphedema

30 patients hospitalized for non-operative treatment of moderate to severe lymphedema of the leg

participants randomized into two groups : group A was treated with ACW (CircAid®) and group B with inelastic multicomponent compression (IMC) bandages

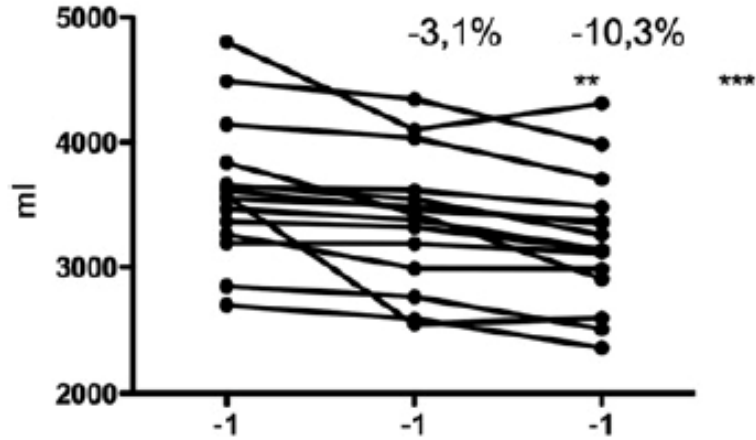
leg volumetry assessment after 2 hours and 1 day



Damstra R, Partsch H. Prospective, randomized, controlled trial comparing the effectiveness of adjustable compression Velcro wraps versus inelastic multicomponent compression bandages in the initial treatment of leg lymphedema. *J Vasc Surg: Venous and Lym Dis* 2013;1:13-9

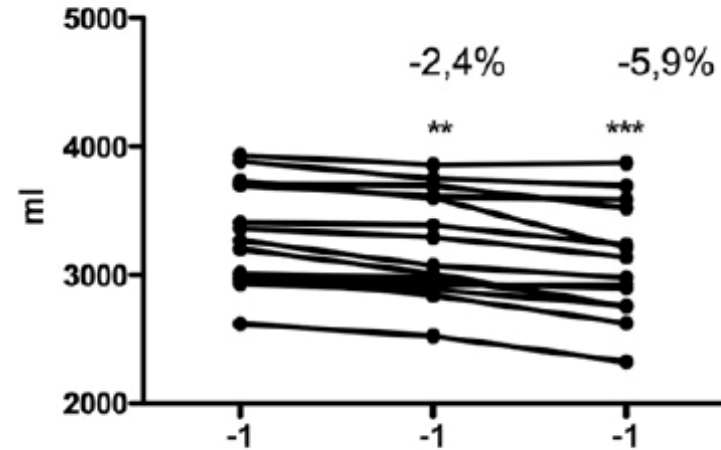
leg lymphedema

ACW / Volume reduction after 2 and 24 h



	t0	t2	t24
Number of values	15	15	15
Minimum	2695	2543	2356
25% Percentile	3262	2991	2907
Median	3570	3430	3141
75% Percentile	3833	3617	3482
Maximum	4801	4347	4308
Mean	3609	3386	3213
Std. Deviation	555.5	527.2	530.0
Std. Error	143.4	136.1	136.8

IMC / Volume reduction after 2 and 24 h



	t0	t2	t24
Number of values	15	15	15
Minimum	2619	2523	2323
25% Percentile	2982	2921	2758
Median	3268	3070	2978
75% Percentile	3707	3610	3521
Maximum	3931	3856	3871
Mean	3314	3224	3085
Std. Deviation	401.4	403.3	435.5
Std. Error	103.6	104.1	112.5

not significant difference after 2 hours; significant after 24 hours ($p < 0.05$)
due to better pressure maintenance

ulcer treatment: 1

treatment of venous ulcers with CircAid is significantly less expensive than treatment with traditional Unna's boots

trends toward faster healing were noted.

ulcer treatment: 2

only one randomized controlled study.

24 extremities of 12 patients with bilateral post-thrombotic venous leg ulcers were randomized to have a four-layer elastic bandage in one leg and a non elastic compression garment CircAid in the contralateral leg.

ulcer treatment: 2

the initial ulcer area:

CircAid group $48.98 \pm 14.13 \text{ cm}^2$

four-layer group $50.08 \pm 18.30 \text{ cm}^2$ (P = .9285)

the follow-up was 12 weeks

the ulcer healing rate was significantly faster in CircAid group compared with four-layer group (P=.0173)

ulcer treatment: 3

66 patients randomized to:

1. C2L
2. Circaid JuxtaFit

primary outcomes:

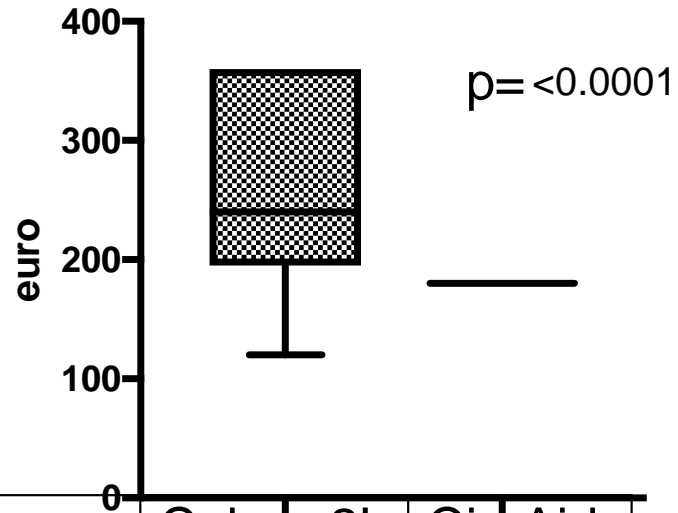
- costs: material, healthcare providers
- self management of compression devices
- ulcer area change
- well-being questionnaire

secondary outcome:

- healing rate after 12 weeks, healing time

ulcer treatment: 3

compression material cost



	Coban 2L	CircAid
Minimum	120	180
25% Percentile	195	180
Median	240	180
75% Percentile	360	180
Maximum	360	180

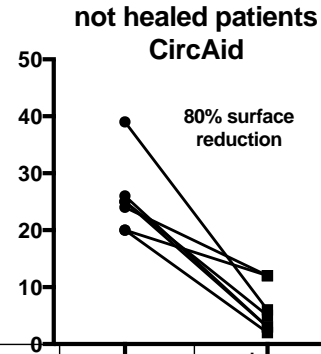
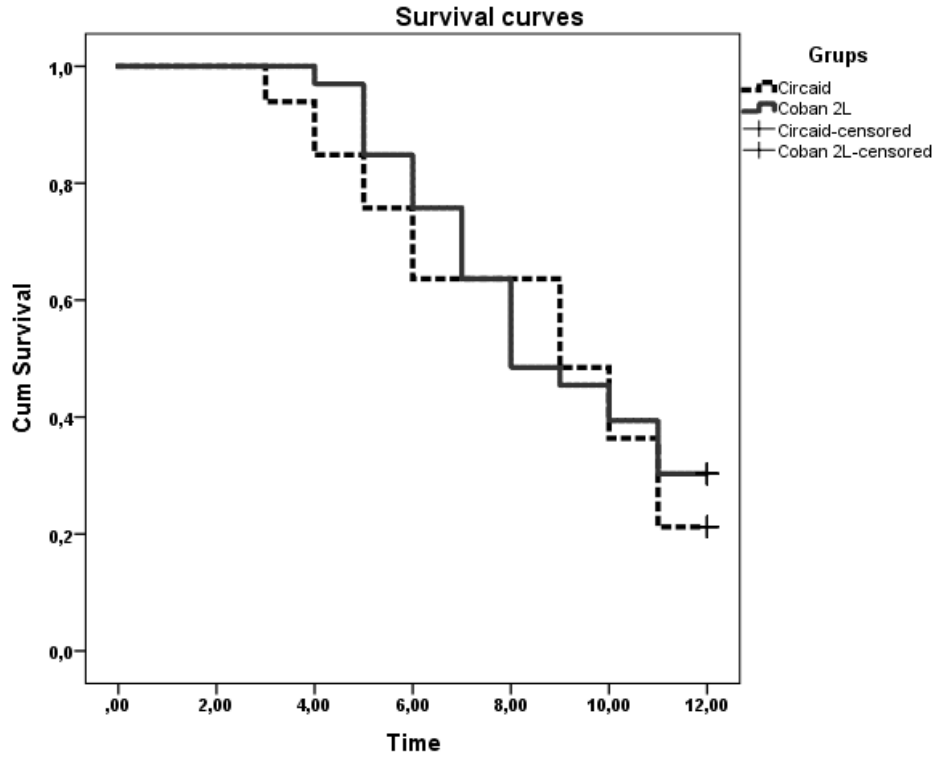
ulcer treatment: 3

material is not the only factor contributing to total costs.

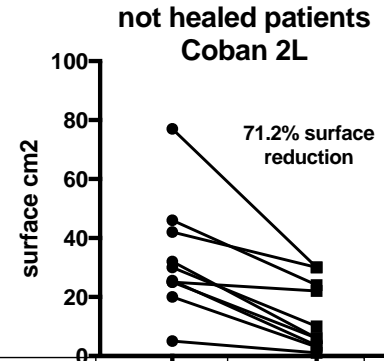
additional cost savings:

- frequently, dressing changes are necessary more than once per week and this would increase the cost of the disposable C2L.
- after 12 weeks, ulcer patients who were not healed (whose number is higher in the group treated by C2L than in the group treated by ACW) will need new bandages while the patients in the ACW group could keep their compression device.
- self-management allowing expert personnel cost saving.

ulcer treatment: 3



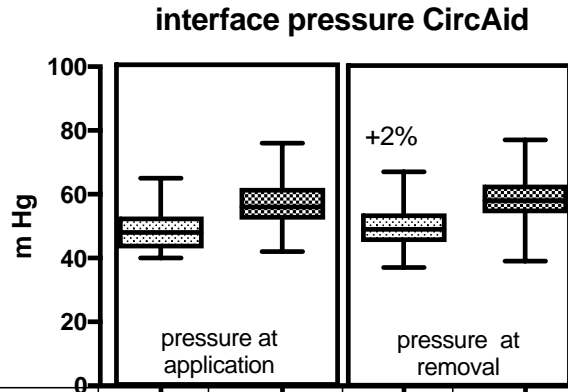
	pre-treat	end treat
Number of values	7	7
Minimum	20	2
25% Percentile	20	3
Median	25	5
75% Percentile	26	12
Maximum	39	12



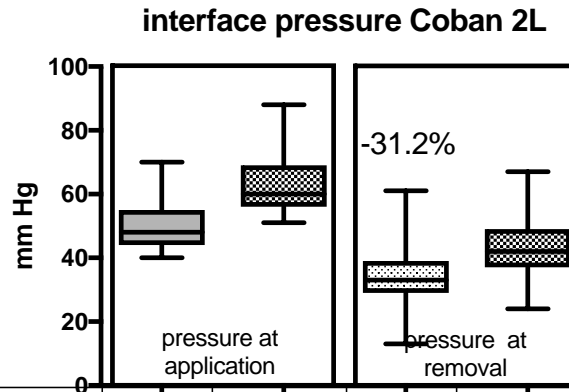
	pre-treat	end treat
Number of values	10	10
Minimum	5	1
25% Percentile	23.75	3.375
Median	27.75	8
75% Percentile	43	25.5
Maximum	77	30

healing rate
83% ACW
65% C2L

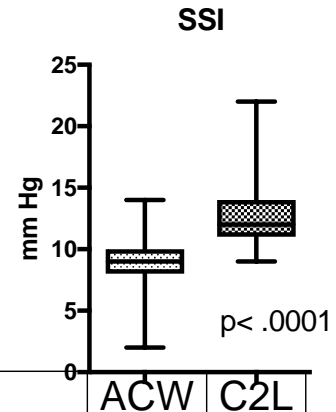
ulcer treatment: 3



	supine	standing	supine	standing
Minimum	40	42	37	39
25% Percentile	43	52	45	54
Median	48	56	49	58
75% Percentile	53	62	54	63
Maximum	65	76	67	77



	supine	standing	supine	standing
Minimum	40	51	13	24
25% Percentile	44	56	29	37
Median	48	60	33	42
75% Percentile	55	69	39	49
Maximum	70	88	61	67

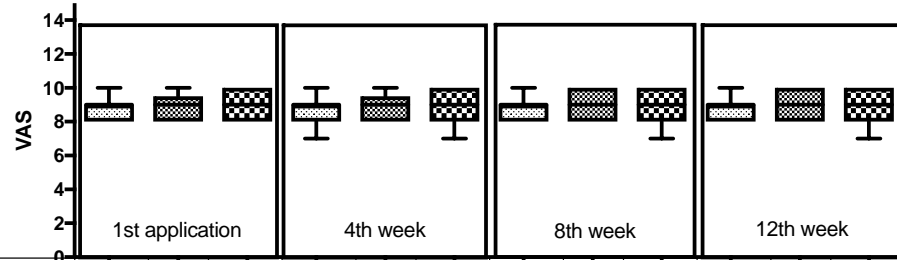


	ACW	C2L
Minimum	2	9
25% Percentile	8	11
Median	9	12
75% Percentile	10	14
Maximum	14	22

Mosti g et al. Adjustable Compression Wrap devices are cheaper and more effective than inelastic bandages for Venous Leg Ulcer Healing. Phlebology in press.

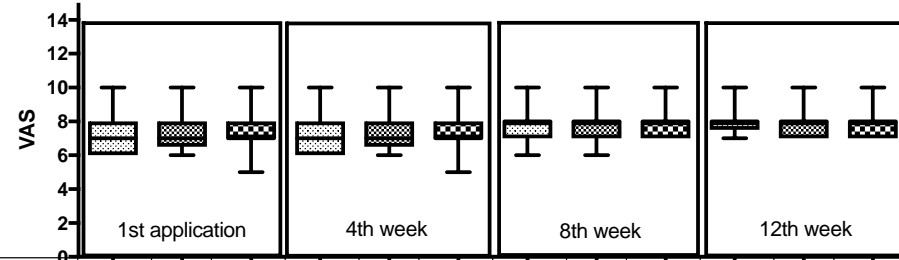
ulcer treatment: 3

comfort CircAid



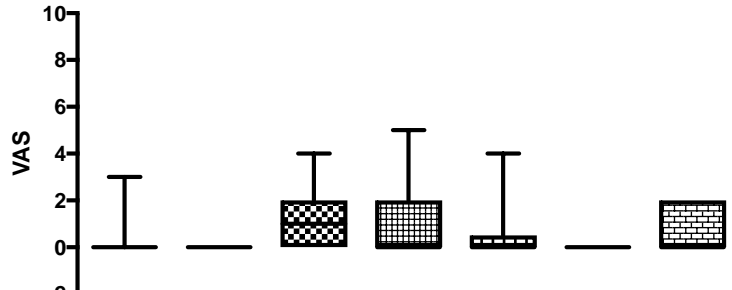
	appl.	day	night	appl.	day	night	appl.	day	night	appl.	day	night
Minimum	8	8	8	7	8	7	8	8	7	8	8	7
25% Percentile	8	8	8	8	8	8	8	8	8	8	8	8
Median	9	9	9	9	9	9	9	9	9	9	9	9
75% Percentile	9	9.5	10	9	9.5	10	9	10	10	9	10	10
Maximum	10	10	10	10	10	10	10	10	10	10	10	10

comfort Coban 2L



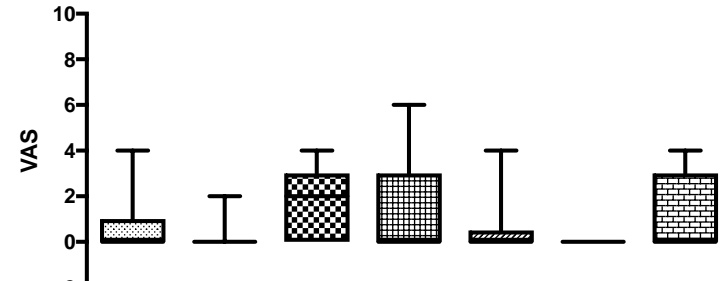
	appl.	day	night	appl.	day	night	appl.	day	night	appl.	day	night
Minimum	6	6	5	6	6	5	6	6	7	7	7	7
25% Percentile	6	6.5	7	6	6.5	7	7	7	7	7.5	7	7
Median	7	7	7	7	7	7	8	8	8	8	8	8
75% Percentile	8	8	8	8	8	8	8	8	8	8	8	8
Maximum	10	10	10	10	10	10	10	10	10	10	10	10

side effects CircAid



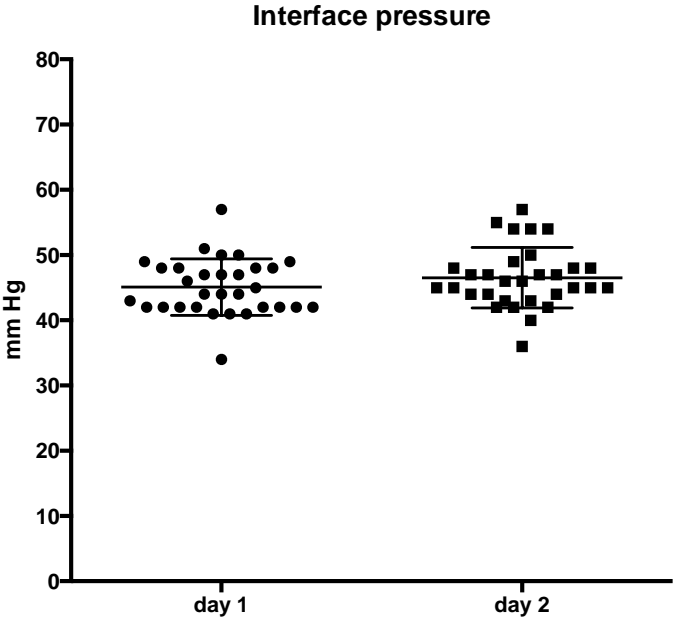
	s. irr.	s. dam.	itch.	heat	throb.	cramps	cutting
Minimum	0	0	0	0	0	0	0
25% Percentile	0	0	0	0	0	0	0
Median	0	0	1	0	0	0	0
75% Percentile	0	0	2	2	0.5	0	0
Maximum	3	0	4	5	4	0	2

side effects Coban 2L



	s. irr.	s. dam.	itch.	heat	throb.	cramps	cutting
Minimum	0	0	0	0	0	0	0
25% Percentile	0	0	0	0	0	0	0
Median	0	0	2	0	0	0	0
75% Percentile	1	0	3	3	0.5	0	3
Maximum	4	2	4	6	4	0	4

self application: 1



	day 1	day 2
Minimum	34.00	36.00
25% Percentile	42.00	44.00
Median	44.00	46.00
75% Percentile	48.00	48.00
Maximum	57.00	57.00
Mean	45.10	46.52
Std. Deviation	4.316	4.639

Mosti G, Partsch H. Druckmessungen unter Klettverschluss-Kompression-Selbstbehandlung durch feste, unelastische Beinwickelung. Vasomed 2017;5:212-6.

Mosti G, Partsch H. Self-management by firm, non-elastic adjustable compression wrap device. Veins and Lymphatics 2017; 6:7003

self application: 2

two training courses for nurses using ACW and instructed to apply the system strongly (>50 mm Hg)

In the first course, the nurses applied the compression system to each other

In the second course another group did it on their own legs.

Results:

first course: the median pressure was 58.5 mmHg (minimal 31, maximal value 137 mmHg)

second course: median pressure was 61.5 mmHg (minimum 35, maximum 102 mmHg).

Table 1. Pressure values (mmHg) measured after self-application (left) versus application of ACW by another person (right).

	Self-application			Application by another person		
	BI lying	BI Dorsifl.	BI standing	BI lying	BI Dorsifl.	BI standing
N	36	36	36	34	34	34
Min	35	25	34	31	35	34
25% Percentile	44	55.25	55.25	47.75	59.5	55.75
Median	61.5	75.5****	73.5****	58.5	72****	65.5****
75% Percentile	75	94	85	74	97.25	89.25
Max	102	186	138	137	165	148

ACW: adjustable compression wrap.

Note: Compared with the baseline value in the lying position.

*** $p < 0.0001$ (Friedman test).



thank you for your attention

actic jar 500 b.C.

giovanni.mosti10@gmail.com