Compression therapy effectively prevents and maintains post-surgical breast cancer-related lymphedema

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This One-Pager presents the benefits of compression therapy in the maintenance and prevention of post-surgical BCRL

BREAST CANCER-RELATED LYMPHEDEMA (BCRL): BACKGROUND [1-17]

Definition BCRL is a swelling of the arm, chest wall, and breast on the surgical side, and is one of the most frequent complications of breast cancer treatment. It results from a disruption of the lymphatic system, causing fluid to accumulate in the interstitial space.

Risk factors These include, among others, axillary lymph node dissection (ALND), sentinel lymph node biopsy and radiation therapy of the axilla.

Incidence 20% at one year, 40% at ten years, cumulative incidence of 28%.

Symptoms Can include swelling, pain, numbness, heaviness, tightness, stiffness, decreased coordination and mobility, limb fatigue or weakness, recurrent infections in the limb, negative changes in self-image, increased anxiety, and poorer quality of life.

BCRL management Education, skin care, exercise, compression therapy and manual lymphatic drainage. Early detection and treatment of subclinical BCRL can prevent progression to its chronic stage and decrease the need for costly treatments.

COMPRESSION & PREVENTION [1]

Paramanandam et al., 2022

AIM To determine whether compression sleeves reduce the incidence of arm swelling in women having undergone ALND for breast cancer surgery.

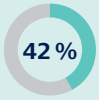
EXPERIMENTAL PROCEDURE

No sleeve	Sleeve
 n = 149 Usual care* No compression	 n = 152 Usual care* Post-surgical compression**

Primary endpoint: arm swelling (bioimpedance spectroscopy, BIS****)
Secondary endpoints: arm swelling (tape measurement), quality of life

RESULTS

BCRL incidence after one year

No sleeve	Sleeve
  52 % BIS  25 % Tape	  42 % BIS  14 % Tape

- Significantly lower BCRL incidence in the sleeve group. (As BIS quantifies extracellular fluid, a higher incidence of swelling detected by BIS is expected.)
- No significant differences between treatment groups for quality of life

TAKE-HOME MESSAGE
Compression sleeves combined with education on arm care and exercise substantially reduce the incidence of BCRL in patients having undergone axillary lymph node dissection.

COMPRESSION & PREVENTION [2]

Ochalek et al., 2017

AIM To determine whether compression sleeves reduce the incidence of arm swelling in women having undergone ALND for breast cancer surgery.

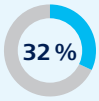
EXPERIMENTAL PROCEDURE

No sleeve	Sleeve
 n = 22 Physical exercise No compression	 n = 23 Physical exercise Post-surgical compression***

Primary endpoint: arm volume (tape measurement)
Secondary endpoint: quality of life

RESULTS

BCRL incidence after one year

No sleeve	Sleeve
  32 % Tape	  17 % Tape

- Significantly less edema in the sleeve group
- High sleeve compliance (10+h/d in 22 out of 23 patients)
- No sleeve discomfort, no donning and doffing difficulties
- Significant improvement in quality of life with sleeves after two years[4]

TAKE-HOME MESSAGE
In patients having undergone axillary lymph node dissection, compression sleeves prevent postsurgical arm swelling, reduce the incidence of BCRL and have a positive impact on quality of life.

*Education, skin, drain care, shoulder exercises; **Sigvaris compression sleeve (20-25mmHg, min. 8h/day), until three months after completion of adjuvant treatments
***compression sleeve (15-21mmHg, 8-10h/day); ****BIS measures extracellular fluid within the arm

COMPRESSION & MAINTENANCE[3]

McNeely et al., 2021

AIM To determine the efficacy of nighttime compression (compression bandages or wraps) on arm lymphedema volume maintenance in women with post-surgical BCRL.

EXPERIMENTAL PROCEDURE Patients had completed all primary and adjuvant cancer treatments for at least one month before they were randomized into the following groups:

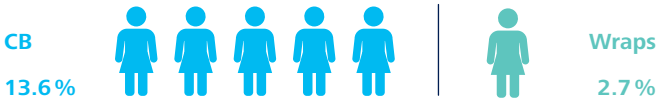
No nighttime compression (None)	Nighttime compression bandages (CB)	Nighttime wraps
n=39	n=44	n=37
Standard care*	Standard care*	Standard care*
No compression	CB**	Wraps***

Primary endpoint: arm volume measured with a perometer****
Secondary endpoint: quality of life

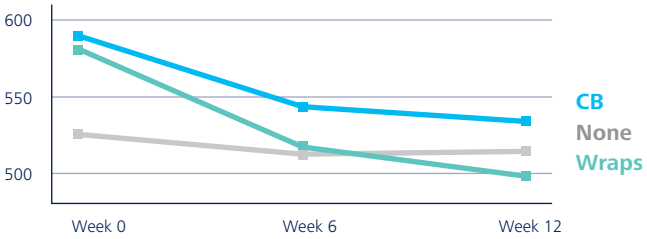
RESULTS

Compliance

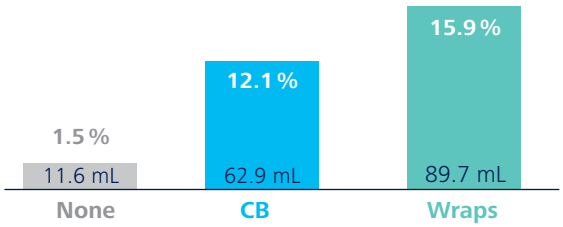
Night discomfort



Excess arm volume over time [mL]



Absolute [mL] and percentage [%] volume reduction (week 0 to week 12)



- With nighttime compression (CB or wraps): significant volume reduction over time
- With nighttime compression (CB or wraps): significantly more volume reduction than without compression
- Improvement in quality of life across all groups
- At week 12, cross-over of all patients to the nighttime wrap group: patients from the "no compression group" benefited the most and showed a significant decrease in arm volume at week 24.

TAKE-HOME MESSAGE

Nighttime compression is beneficial as a self-management strategy for chronic BCRL. These results are in accordance with a study showing that nighttime use of wraps offers benefits to patients during the maintenance phase of lymphedema treatment and enhances patients' autonomy[16]. This seems to be especially true in patients that have no previous experience in bandaging[3].

*sleeve (12h/day), skin care, exercise, body weight maintenance; **multi-layered compression bandages; ***Sigvaris Medaform Standard Arm; ****a perometer uses infrared technology to quantify limb volume

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Arm Lymphedema Self-massage Exercises

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