

Risk factors and treatment of chronic lymphedema in breast cancer

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Arm lymphedema following BC treatment



1970s



1990s



2010s

Incidens – Arm lymphedema

Measured objectively by WDM

Axillary surgery + axillary RT

2001	Johansson et al.	(2 y, n=19)	37%
2010	Branje & Johansson	(10 y, n=292)	39%
2012	Jess & Johansson	(2 y, n=20)	36%
2015	Johansson & Lathinen	(1 y, n=100)	38%

Sentinel node + RT to the breast

2015	Johansson & Lathinen	(6 m, n=96)	(2%)
		(1 y,)	0%

Risk factors for the development of lymphedema: findings from a meta-analysis

Strong Evidence

More extensive surgery

More extensive lymph node surgery

Higher BMI

Moderate Evidence

Higher number of metastatic nodes

Chemotherapy

Radiotherapy

Physical inactivity

Weak or inconclusive evidence

Age

Treated on dominant side

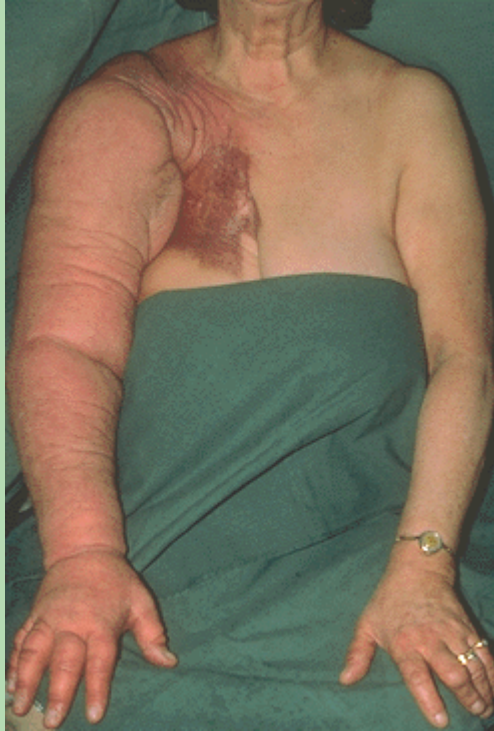
Stage of disease

Postoperative infection

Presence of comorbidities

Receipt of LE education

Arm lymphedema treatment



1970s



1990s



2010s

Early diagnosis → Early treatment

- Follow-up after surgery and RT with objective measurements
- Teach the patients to look for early signs and make contact

Feeling of tightness in tissue
Blood vessels "disappearing" into the tissue
Cloths or jewelries fitting tight
etc

Simple methods for early diagnosis

1. **Volume** →
measurements
(LE \geq 5% difference)



2. Increased skin **thickness** →



3. VAS (Visual analogue scale, 0-100): **Tightness**

10 Year follow-up after Arm Lymphedema Diagnosis

Retrospective study, n=98

	Mean Lymphedema Relative Volume
At diagnosis	8,1±3,6 %
At follow-up	
mean 4 years after diagnosis	9,0±6,7 %
90 % of the patients	≤ 20% (mild)

Follow-up

Advanced methods for early diagnosis



Perometer



BIS – Bioimpedance spectroscopy



TDC - Tissue dielectric constant

Common LE treatments

Compression garments



Bandaging



Additional

Manual lymph drainage

MLD



Pneumatic
compression



Review RCT

- 2008 Preston mix (3) Cochrane
- 2009 Kärki BCRL (14) Review
- 2010 Devoogdt BCRL (11) Review
- 2013 Huang BCRL (10) Review +meta
- 2011 McNeely mix (25) Review+meta

80% BCRL

Evidence level 1-4

Bandaging



1 study, n=90

Moderate evidens (2)

Largest reduction 60%

Simple and relatively
cheap but not on a daily
bases

Compression sleeve/glove



3 studies n = 109

Moderate evidens (2)

Largest reduction 24%

Simple and relatively
cheap

Pneumatic compression



4 studies, n=170

Largest reduction 25%

Limited evidens (3)

Takes time + garment
between treatments

2 weeks – small effect

2 months – high effect

Addition of MLD to compression Meta analysis

Conservative Treatment for Lymphedema/McNeely et al

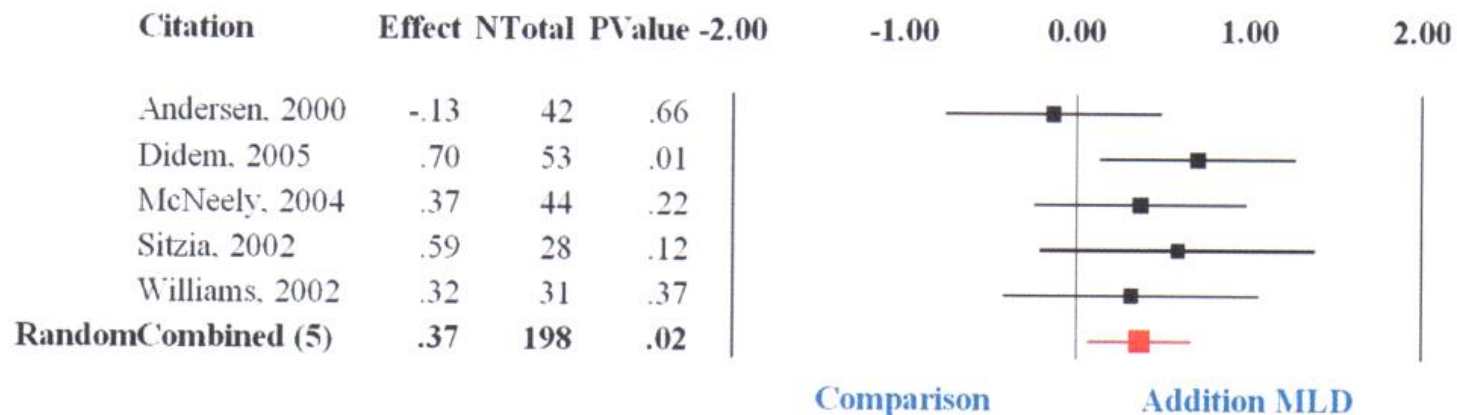


Figure 1. Relative benefit from the addition of MLD in reducing upper extremity lymphedema volume in breast cancer postintervention.

- 5 studies, n=198
- Small but significant reduction ($p \leq 0.02$)
- Largest reduction 19%
- Costly treatment in time and money

Conclusion

The findings support the use of compression garments and compression bandaging for reducing lymphedema volume.

MLD

“the cost in terms of time and finances to the patient may make provision of this therapy prohibitive.

Clinically, it may be reasonable to prescribe compression therapy as a first-line treatment and consider adding MLD if the response to treatment is less than optimal.”

McNeely et al. Conservative and dietary interventions for cancer-related lymphedema. Cancer 2011; 117; 1136-48

First: Compression

Second: MLD and/or pneumatic compression

Cochrane MLD published YESTERDAY

MLD is safe and may offer additional benefit to compression bandaging for swelling reduction. Compared to individuals with moderate-to-severe BCRL, those with mild-to-moderate BCRL may be the ones who benefit from adding MLD to an intensive course of treatment with compression bandaging. This finding, however, needs to be confirmed by randomized data.

Weight reduction

- RCT
- n=24
- I: Diet (1000-1200 kcal/day) for 12 weeks + sleeve
- C: Sleeve

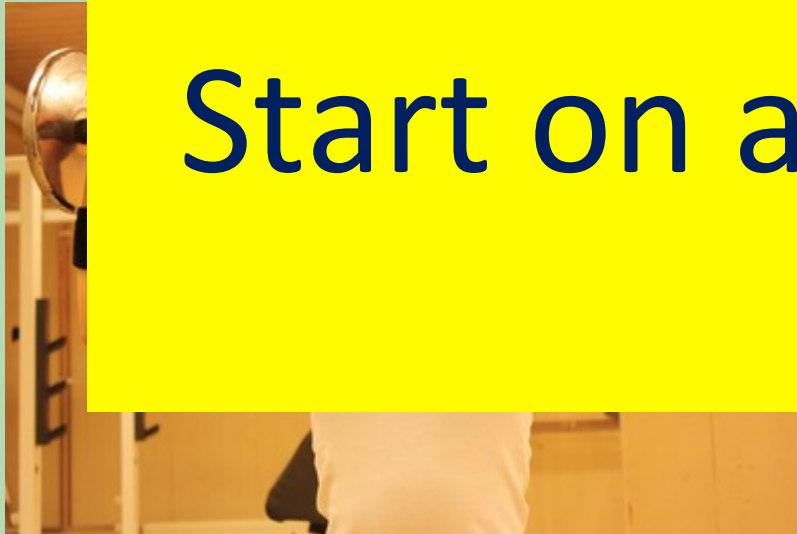
LRV, %, mean±SD	K	I	p-value
Start	25 ± 8	24 ± 12	
Wk 12	25 ± 7	15 ± 10	
	0 ± 4	10 ± 9	.003 ←
Weight reduction (kg)	0 ± 2.97	3.3 ± 2.6	.02 ←
BMI reduction (kg/m ²)	0 ± 2.97	1.3 ± 1.1	.016 ←

Exercise

Exercise for BC patients is associated with strength, endurance, ROM, function and QoL benefits

Start on a low level

en



Intense pole-walking can reduce arm lymphedema
(Jönsson & Johansson, 2014)

Summery

- Early diagnosis
- Well fitted compression garment
- Self-care Weigth control
 Exercise
- Measure intervention
- Mental support for good compliance

Thank you!