

早期緩和療護病患之 淋巴水腫治療

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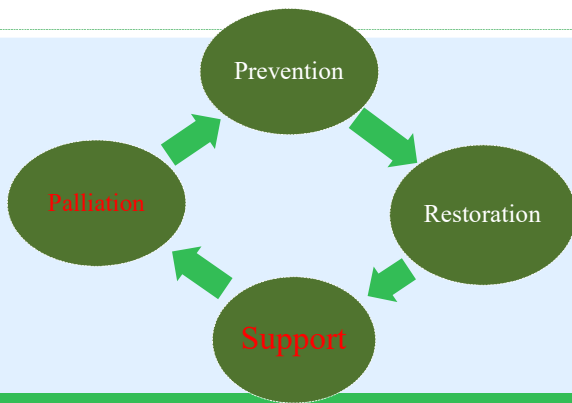
癌症的病程

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- 依照Gerber et al的定義, 癌症的病程, 可以分成5個階段,
- 診斷與治療(initial diagnosis and treatment)
- 追蹤(surveillance)
- 復發(recurrence)
- 延長(temporization)
- 支持性(palliative)

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Cancer Rehabilitation:



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癌症復健:

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1. Physiology & Anatomy of lymphatic system :

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- 1. Superficial system: dermis, subcutaneous
- 2. Deep system: subfascial area, deep collector, muscle, joint, ligament, synovial fluid.

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1. Physiology & Anatomy of lymphatic system :

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- 淋巴結: 600-700個淋巴結, 絕大多數淋巴液在淋巴結回到血液循環, 而非從胸管或上腔靜脈回到心臟系統, 這也就是為何局部淋巴結功能不良會造成淋巴水腫的原因。

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淋巴水腫

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- 次發性淋巴水腫:
- 1. 癌症治療所引起的: LN dissection, R/T
- 2. 腫瘤轉移至淋巴結所引起的, 常會伴隨血管或神經侵犯 >> malignant lymphedema
- 3. taxanes (docetaxel)

乳癌 Breast cancer

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- 1st leading cause of secondary lymphedema in developed countries. Depression, anxiety, QOL
- Axillary lymphadenectomy (ALND Vs SLNB)
- Radiation to the axillary lymph nodes
- Type of surgery (MRM Vs BCS)
- BMI: >30 Vs <25. Heber L.K. 2010
- African American. Kwan. 2010
- Breast cancer related lymphedema (BCRL) 發生率約 20%。
- 哨兵淋巴結切除減少乳癌病人淋巴水腫發生率, 但不是完全不會發生。
- 早期乳癌接受哨兵淋巴結切除後, 10年淋巴水腫發生率為 4.6%。

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下肢淋巴水腫 lower limb lymphedema (LLL)

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- Cervical/Uterine/Ovarian cancer; Melanoma, Prostate cancer
- Radiation
- Suprafemoral node dissection
- Beesley V et al., 802 gynecological cancer, 10% with LLL, and a further 15% undiagnosed "symptomatic" LLL. most LLL in the first year (75%). *Cancer, 2007.*
- Ohba Y et al: 20.0% / 追蹤 6.1 years. *Int J Clin Oncol 2011*

頭頸癌淋巴水腫

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- 發生率為 12-54%, 其差異為不同評估量表, 定義為外在或內部 (external, internal) 的淋巴水腫及追蹤時間長短而有所不同。
- Buntzel 分析 1998-2001 年診斷之頭頸癌個案, 平均追蹤 643 天發現 48% 個案有淋巴水腫
- Schiefke, 哨兵淋巴切片 (SNB), 或頸部淋巴節清除 (SND) 的淋巴水腫發生率, 哨兵淋巴切淋巴水腫發生率為 17%, 而頸部淋巴節清除淋巴水腫發生率為 36%。
- Wolff (2009) 發現 cisplatin+放射治療治療頭頸癌後, 淋巴水腫發生率為 12%。

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3. 淋巴水腫的檢查及診斷:

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- Stemmer sign: 腳背及指背表皮變厚, 無法拉起, 表示是肢體的淋巴水腫 (但若沒有 stemmer sign, 無法排除不是淋巴水腫)。

圍徑 (circumference):

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- 一般以二側圍徑相差超過 2 公分 (上肢)、3.5 公分 (下肢), 但有時測量點並非是最腫處, 需多測量幾個點, 是很重要的, 也可以從腳踝或指尖往上每 5-10cm 測量一次, 較精準。
- 體積測量: 200 ml; >10 (5) % (上肢), 5% (下肢)。

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SFLO Renew article

Sue Fen Liao, 2022-07-25T03:46:15.943

顏面淋巴水腫的診斷：

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- 臉部距離
- 超音波測量: Piso在2002年發表超音波測量下頷骨及舌骨的skin to bone距離來追蹤頭頸癌淋巴水腫

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3.淋巴水腫的檢查及診斷:

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Imaging techniques:

- 超音波靜脈血管掃描(Doppler): deep venous system
- Lymphoscintigraphy: 確定是否有lymphedema. Lymphatic function.
- CT, MRI: recurrent or metastatic cancer
- Sonography:

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4.淋巴水腫的分期：

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- Stage- Földi and Földi stage:
- 潛伏期：淋巴運輸能力變差，但與淋巴負載仍能達成平衡，此一階段尚未產生臨床上的淋巴水腫。

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4.淋巴水腫的分期：

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- 第一期：早期水腫的肢體，此時如果常把手或腳抬高，通常可以改善。水腫肢體是軟的，若用手指去按壓，會形成一個凹窩。

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4.淋巴水腫的分期：

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- 第二期：已不能自己改善，有結締組織增加，皮下組織會纖維化，變得比較硬而且厚。Stemmer sign已出現。

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4.淋巴水腫的分期：

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- 第三期：淋巴橡皮症；肢體變得很硬很厚，表皮增生，贅疣形成，皮膚會角質化。

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5. 淋巴水腫的預防Lymphedema Prevention:

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- 1.減少淋巴液的產生：
 - (1)避免肢體過度勞動: no limitation in ADL and weightlifting.
 - (2)避免使血管擴張，因為會增加淋巴液的產生（蒸氣浴，患肢熱敷，深部按摩，宜避免之）
- 2.避免影響淋巴液回流：
 - (1)不要穿著束腹及馬甲
 - (2)盡量減少在患肢量血壓、抽血

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5. 淋巴水腫的預防Lymphedema Prevention:

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- 3.保護皮膚，避免皮膚有傷口及感染：
 - (1)避免抽血、注射、針灸或放血。
 - (2)保護患肢皮膚，小心修剪指甲，避免刮傷、燒燙傷或蚊蟲叮咬等外傷。
- Cellulitis increases risk of lymphedema, ipsilateral blood draws, injections, blood pressure readings, and air travel **may not** be associated with arm volume increases. Ferguson CM et al, *J Clin Oncol.* 2016
 - Blood draw increased risk of lymphedema-prospective 6,36 months after O/P Didem Ket al, *Breast Cancer Res Treat.* 2005

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5. 淋巴水腫的預防Lymphedema Prevention:

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- 搭飛機，risk for lymphedema嗎？
- **Effect of Air Travel on Lymphedema Risk in Women With History of Breast Cancer.** *Breast Cancer Res Treat.* 2010 Apr;120(3):649-54
- Canada (n = 60) and Australia (n = 12) attending a dragon boat regatta in Queensland. 2 weeks prior to their flight, 6 weeks following return to Canada; bioimpedance device (BIA).
- >>> no difference in BIA, but 5-6% lymphedema after long air flight. Low risk, but is not no risk.

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4. 規律的運動:

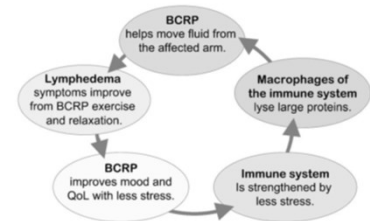
肌肉收縮可以促進淋巴回流，所以肌力及活動度較好的患者，淋巴回流也較佳。

Low to moderate intensity exercise

High intensity resistant exercise, might induce lymphedema.(90-100% 1RM)

Weight loss, home-based exercise, and combined interventions did not improve BCRL outcomes. *JAMA Oncol.* 2019 Aug 15;5(11):1685-1693.

BCRP Feed-Forward "Circle of Healing" Concept



4. 淋巴水腫的預防 Lymphedema Prevention:

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Omar MTA et al, Low-Intensity Resistance Training and Compression Garment in the Management of Breast Cancer-Related Lymphedema: Single-Blinded Randomized Controlled Trial. *Journal of Cancer Education.* 2020

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- low-intensity resistance exercises Vs exercises and compression garment. exercises program consisted of 10-12 repetitions at 50 to 60% of IRM, 3 times/week, for 8 weeks.
- heaviness ($p < 0.05$) and tightness ($p < 0.001$), and improvement in shoulder ROM ($p < 0.05$) and function on DASH scores ($p < 0.05$) were observed at W8 and W12 in both groups, no between-group differences. Low-intensity resistance training, irrespective of garment use, can effectively reduce limb volume and lymphedema symptoms, and increase shoulder mobility and function.

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6. 淋巴水腫的治療：

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- 去腫脹淋巴療法：C.D.T.(Complete Decongestive Therapy), C.D.P.(complex decongestive physiotherapy)，或C.L.T.(Complete lymphatic therapy)。
- 治療原則是藉由表淺式淋巴引流(Manual Lymphatic Drainage, M.L.D.)，促進淋巴管收縮，把淋巴導向附近仍有功能的淋巴結，再加上外在的壓力的壓迫，以減少淋巴液的產生，並促進其回流。

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CDT去腫脹淋巴療法：包括4大部分

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- 皮膚照護:
- 表淺式淋巴引流(manual lymphatic drainage M.L.D.): 藉由引流手法促進淋巴管收縮, 把淋巴液導向附近仍有功能的淋巴系統, 如對側的腋下淋巴結及同側腹股溝淋巴結等。之後還要配合下述方法才會有更好的效果。

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CDP去腫脹淋巴療法：

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- 壓迫治療:表淺式淋巴引流(M.L.D.)完後, 給予壓迫治療, 可以增加組織壓, 並促進其回流, 減少淋巴液的產生。
- 治療性的運動:穿戴壓力手套、壓力襪或用低彈力繃帶纏繞壓迫後, 必須依照順序作藉由側肢循環促進淋巴液回流的運動。

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Contraindication of CDT :

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- absolute contraindication:
- cardiac edema/CHF
- Lower limb arteriopathy (PAOD), ankle pressure<70 mmHg (ankle/brachial 0.7)
- Neuropathy
- Lower limb wound/trauma; fragile skin, dermatitis, gangrene or recent skin graft
- A-V shunt
- Metastatic cancer

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M.L.D. (manual lymphatic drainage)

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- 表淺式淋巴引流(M.L.D.): 促進淋巴管收縮, 把淋巴液導向附近仍有功能的淋巴系統。

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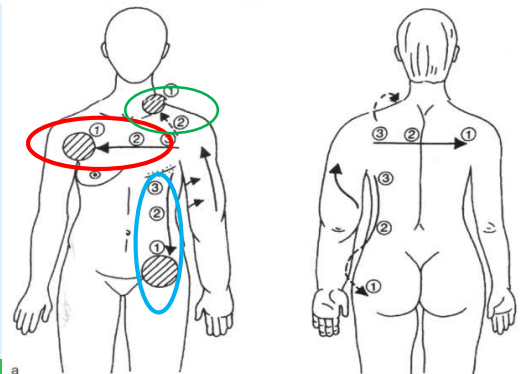
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- 引流過程, 最重要是軀幹及肢體近端, 肢體遠端如果時間不足, 可以略過, 以穿著壓力手套或襪取代。以24分鐘按摩為例, 軀幹部分要占16分鐘, 肢體僅需8分鐘。例如:穿著壓力襪時也可按摩, 僅按摩軀幹及大腿。

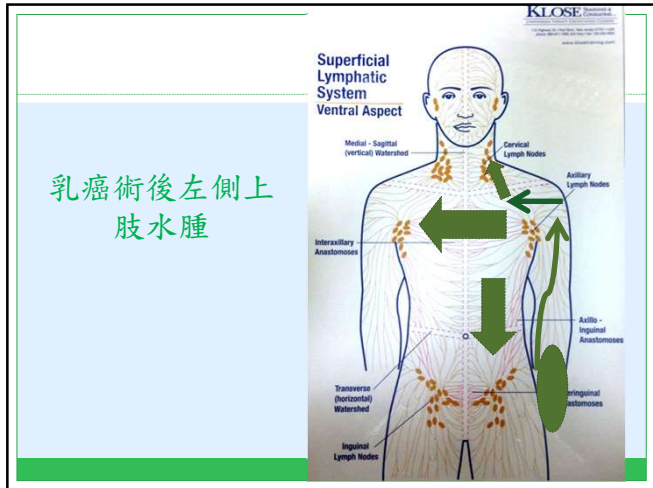
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乳癌術後左側上肢水腫

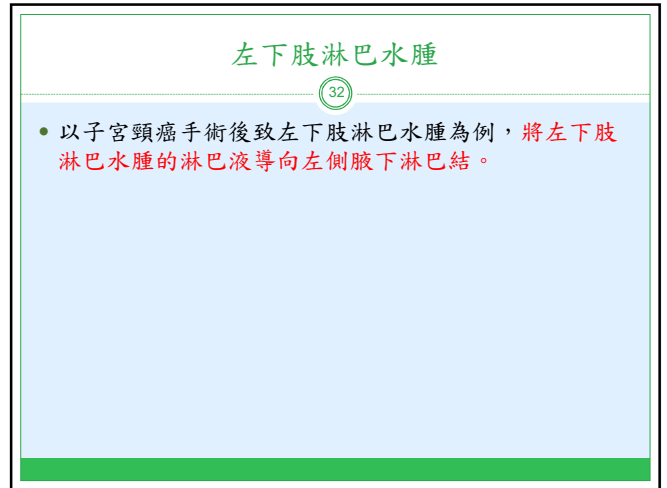
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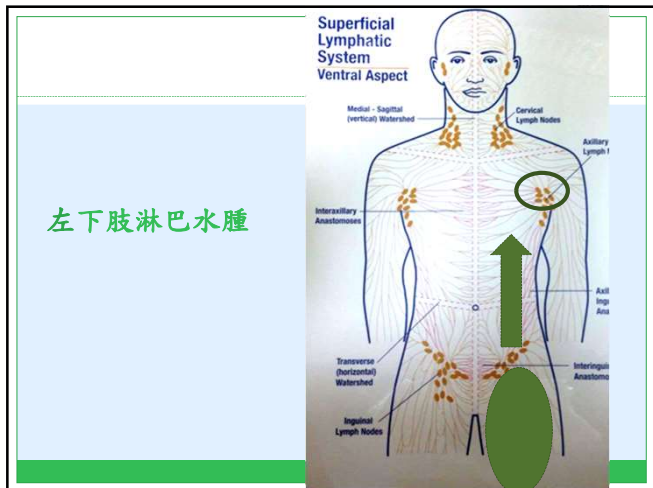
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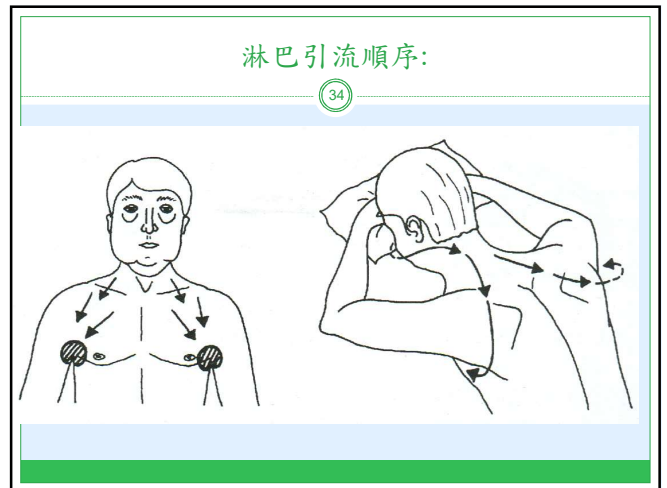
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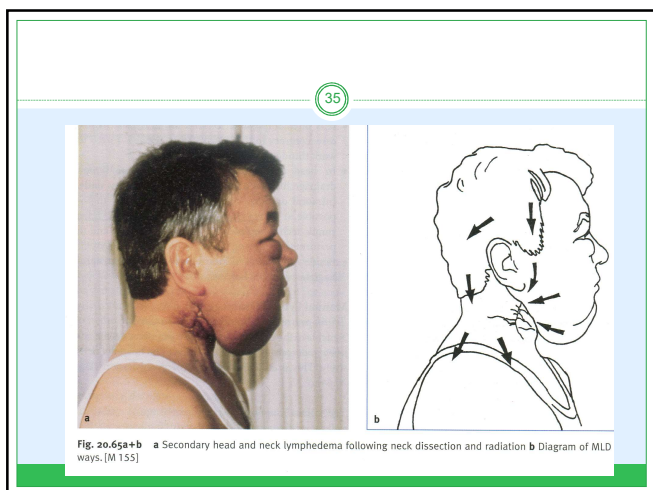
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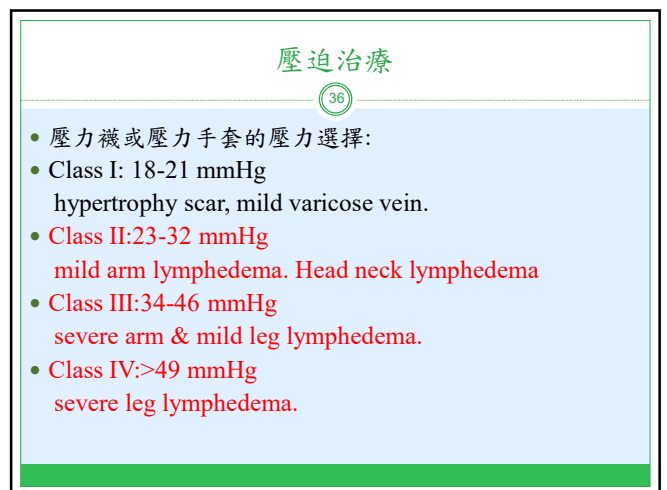
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治療性的運動 Decongestive Exercise:

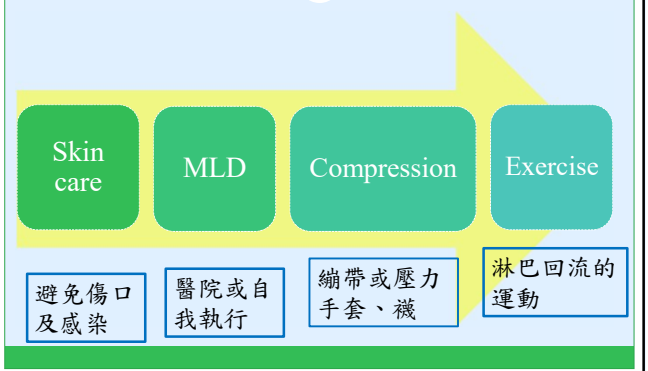
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- Warm up
- Stretch exercise
- Decongestive exercise: muscle chain. 穿戴壓力手套、壓力襪或用繃帶纏繞壓迫後，必須依照淋巴液回流的順序作運動。

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CDT

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6.CDT療效 in post-cancer lymphedema:

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Conclusions:

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- The CDT program was **effective** and successful.
- Baseline lymphedema severity was the most important predictive factor for CDT efficacy.
- We should encourage and refer patients to undergo treatment for lymphedema, even when **the lymphedema is mild**.

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CDT in recurrent cancer

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Pinell XA et al. *Cancer*. 2008

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- Patients with LE may obtain relief with CDT in local recurrent disease. However, it will likely take **longer** to achieve that effect.
- Manipulative therapy of LE should not be withheld because of persistent or recurrent disease in the draining anatomic bed.

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CDT in palliative care

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Real S et al. *J Palliat Med.* 2016
Cobbe S et al. *Int J Palliat Nurs.* 2017;23(3):111-119.

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- Lymphoedema: CDT
- Non-lymphatic oedema-compression therapy (bandaging or garments)

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Kinesio Taping:

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- 缺點
- Wound:
- Xerosis, pruritus:
- Expensive:不可重複使用

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Effectiveness of four types of bandages and kinesio-tape for treating breast-cancer-related lymphoedema: a randomized, single-blind, clinical trial.

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- T-L M et al. *Clin Rehabil*, 2020
- This study showed significant differences between the bandage groups in absolute value of excess volume ($P < 0.001$).
- The **simplified multilayer (59.5%)** >>cohesive bandages (46.3%) >>multilayer(36.3%) >>adhesive bandage (21.7%) >> **kinesio-tape (4.9%)**.
- Conclusion: Simplified multilayer seems more effective and more comfortable than multilayer bandage. **Kinesio taping seems the least effective.**

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Intermittent Pneumatic compression

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- Time, frequency 沒有定論
- Haghghat S : CDT Vs CDT+IPC:43.1 Vs 37.5% >>16.9 Vs 7.5% (3 months later). *Lymphology* 2010.
- In selected patients, IPC use **may** provide an acceptable **home-based treatment** modality in addition to wearing **compression garments**. *Lymphology* 2012.
- 國外主用於不方便至醫院治療之病人長期使用，但是，仍必須和以上方法配合，才能達到療效。

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Dunn N et al . Intermittent Pneumatic Compression for LLL: A Pilot Trial of Sequencing to Mimic Manual Lymphatic Drainage Versus Traditional Graduated Sequential Compression. *Lymphat Res Biol.* 2021

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- The LymphAssist IPC regimen was significantly more effective in reducing distal leg volume than the sequential mode (mean volume reduction: **230mL** vs. **140 mL**, $p = 0.01$). Improvements in leg volume were transient as both groups demonstrated a rebound in volume during the washout period (LymphAssist: **238 mL**, sequential: **276 mL**, $p = 0.3$). IPC was effective in improving quality-of-life scores (mean reduction: 10 – 11, $p < 0.001$).

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