Innovative Lymphedema Management Program (LMP) in TWH for Breast Cancer Patients to improve service efficiency and effectiveness

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Background

• 11.3% patients with axillary dissection done developed lymphedema at 3-month post breast cancer operation

• Poster Presented in HA Convention 2010
Background

• Lymphedema is a long-term complication
• Requires enduring, continuous and demanding hand-on treatments
• Gives an enormous burden to the medical system
• Complete Decongestive Therapy (CDT) costs about $7,000 US for the recommended 4 week treatment session (BC Cancer Agency).
Complete Decongestive Therapy (CDT)

- Evidence-based international **Gold Standard** for treating lymphedema
- Hand on Hand Treatment
Complete **Decongestive Therapy** (CDT)

- **Components:**
  - Manual Lymph Drainage (MLD)
  - Compression bandaging
  - Remedial Exercise
  - Meticulous skin and nail care
  - Instructions in self-care

- Total treatment duration/ session ~ 60 min
- Treatment frequency 3-5 times/ week is recommended
- >4 weeks treatment is recommended
Lymphedema

Should we leave them behind??
Lymphedema

- Long term complication after breast surgery
- Incident rate 3-37%
- Cellulitis
- S/S: P+, P/N, numbness, burning, brusting, heaviness......
- Affect physical function
- Affect QoL
- Disfiguration
Physiotherapy for lymphedema in TWH

• Physiotherapy has started Lymphedema management since 2011
  
  • Jan 2011- June 2012
  
  • 35 new lymphedema patients were referred for PT, 27 were indicated for treatment
  
  • But, all were under the Prior Program (PP) which was non-structural 😞
The Ratio of the 5 CDT components in the Prior Program

- MLD: 30%
- Compression Bandaging: 30%
- Instructions in self-care: 20%
- Remedial Exercise: 10%
- Meticulous skin and nail care: 10%
Service Gaps

• Not structuralized
• Lack Self–management and carer education
• Multiple tasks in each session
• Make patient / carer confused
• Each session > 60 min
• Depends on how well the patient / carer can manage
Self-Management skill cannot be revised intensively.

- Treatment Frequency ~ once/week
- Long Total F.U. period
- Long waiting time
- PT dependent
- ? slow progress without closely monitoring

Resource Burden
Waiting time
(From initial assessment to the 1st session of treatment)
- Range: 1-377 days
- Mean: 105.4 days

Total follow-up period
(From initial assessment to the discharge date)
- Range: 6-433 days
- Mean: 141.7 days
Long Waiting Time
Long total F.U. period
Less patient can be treated
Worsening condition
Feedback from patients

- Lymphedema Management in other out-patient centres
- Lack hand-on treatment
- No significant progress
- Education session was short and brief

- The information was confusing
- The treatments were different in different centres
- No regular F.U.
How to make use of the existing resources to enhance the existing service?
An innovative structural Lymphedema Management Program (LMP) was established in Jul 2012.
LMP

Objectives:
(1) Minimize patients' suffering
(2) Better use of resource
(3) Improving the effective use of treatment sessions
The Ratio of the 5 CDT components in Prior Program

- Instructions in self-care: 20%
- MLD: 30%
- Compression Bandaging: 30%
- Remedial Ex: 10%
- Meticulous skin and nail care: 10%
Innovative structural Lymphedema Management Program (LMP)
Inclusion criteria

✓ Required treatments on all 5 CDT components
✓ Agreed to perform self-management
# Treatment Plan

<table>
<thead>
<tr>
<th>Session</th>
<th>Period</th>
<th>Duration</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Initial Assessment</td>
<td></td>
<td>■ Education of Lymphedema pathophysiology, management and prevention</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>■ Initial Assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>■ Treatment Plan with Patient +/- Care-giver</td>
</tr>
<tr>
<td>2</td>
<td>Same week if possible</td>
<td>60 min</td>
<td>■ Treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>■ Education for Self-management +/- Care-giver (Modified MLD + skin care + remedial ex)</td>
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<tr>
<td>3</td>
<td>Same week if possible</td>
<td></td>
<td>■ Reassessment</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>■ Treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>■ Revise the skill of modified MLD + skin care + remedial ex</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>■ Education for Self-management +/- Care-giver (Bandaging)</td>
</tr>
<tr>
<td>4</td>
<td>1-week F.U.</td>
<td></td>
<td>■ Reassessment</td>
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<td></td>
<td></td>
<td></td>
<td>■ Treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>■ Revise the skills of Self-management +/- Care-giver</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Modified MLD + Bandaging + skin care + remedial ex)</td>
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<tr>
<td>5</td>
<td>1-month F.U.</td>
<td></td>
<td>■ Reassessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>■ Revise the skills of Self-management +/- Care-giver</td>
</tr>
<tr>
<td>6</td>
<td>3-month F.U.</td>
<td>30 min</td>
<td>■ Reassessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>■ If the condition is static, refer for custom-made pressure garment by occupational therapist OR ready-made pressure garment</td>
</tr>
</tbody>
</table>
1st session

- Treatment Plan
- Any carer?
- Can I manage?

Education

Initial Assessment

60min
2nd – 4th session

- Treatment
- Education for Self-management +/- Care-giver
- Modified MLD + skin care + remedial ex + Bandaging
- Specific goal in each session
- Revision the skills of self-management

60min
5th- 7th session

- Regular F.U. at 1wk, 1 month and 3 month

- If the condition is **STABLE**, refer for custom-made pressure garment by occupational therapist **OR** ready-made pressure garment
Outcome measures

LMP were elevated

(i) Waiting time
    (from initial assessment to the 1st session of treatment)

(ii) Total follow-up period required
    (from initial assessment to discharge date)

(iii) Arm circumference

(iv) Satisfaction survey in LMP
Results

• Jul-Dec 2012 (6 months)
• 13 patients were indicated for CDT
• 5 patients were recruited in LMP
## Results

<table>
<thead>
<tr>
<th></th>
<th><strong>PP</strong></th>
<th><strong>LMP</strong></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>18 months</td>
<td>6 months</td>
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<tr>
<td><strong>Waiting time</strong></td>
<td>Range: 1-377 days</td>
<td>Range: 19-49 days</td>
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<tr>
<td></td>
<td>Mean: 105.4 days</td>
<td>Mean: 30.8 days</td>
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<td>(↓ 74.6 days)</td>
<td>(↓ 74.6 days)</td>
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<tr>
<td><strong>Total follow-up period</strong></td>
<td>Range: 6-433 days</td>
<td>Range: 29-161 days</td>
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<tr>
<td></td>
<td>Mean: 141.7 days</td>
<td>Mean: 69 days</td>
</tr>
<tr>
<td></td>
<td>(↓ 72.7 days)</td>
<td>(↓ 72.7 days)</td>
</tr>
</tbody>
</table>
Results

Mean waiting time (from initial assessment to the 1st session of treatment):
- PP: 105.4
- LMP: 30.8

Mean total follow-up period (from Initial Assessment to the Discharge date):
- PP: 141.7
- LMP: 69
Results

• Patients could be discharged within approximately 6 sessions of treatment
• Mean arm circumference reduction was 21.5%
• 80% patients understood the needs and advantages of self-management
• 80% patients agreed that self-management could improve lymphedema and LMP could help them.
Lymphedema Management Program (LMP) Service Evaluation

1. I understood the pathophysiology and the cause of lymphedema
2. I understood the treatments for lymphedema
3. I understood the treatment plan and goal
4. I understood the needs and advantages of self-management
5. Self-management can improve lymphedema
6. I like self-management rather than receiving physiotherapy in hospital frequently
7. I have confidence in self-management
8. LMP can reduce my fear towards lymphedema
9. Overall, LMP can help me
Conclusions

- Mean waiting time was shortened
  • Patients’ suffering could be minimized

- Mean total follow-up period required was shorter
  • More new patients could be treated
  • Better use of resource

- Lymphedema could be improved after approximately 6 sessions of follow-up
  • Effective use of treatment session
Limitation
- Subject number was small

Plan
- Continue to evaluate LMP

Think
- How about those patients who cannot have self-care management?
• Reference


Acknowledgement

- Ms So (Manager of Physiotherapy Department)
- Team members of TWH Breast Centre
  - Dr Ava Kwong (Chief of Division of Breast Surgery, Clinical Associate Professor, The University of Hong Kong)
  - Dr Dacita Suen (Associated Consultant)
  - Ms Sau Ching Lam (Ward manager)
  - Ms Mei Kum Chan (Manager, Education and Service Development)
  - Ms Ling Wong (APN)
  - Nurses
  - Occupational therapist
Training at USA