Prevention of Shoulder Pain Program in Stroke Patients

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Clinical Audit Session
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• By Quality Assurance Subcommittee, COC in Occupational Therapy

• Correspondence:
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  – MR. Bobby Ng
Background

• Stroke is a major client type referred for Occupational Therapy; around 6,000 @ year

• Shoulder pain is commonly found in acute stroke patients, especially those with poor upper limb function;
  – causes much suffering to the patients,
  – leads to poorer rehabilitation outcome and induces higher rehabilitation cost.

• However, in review of its etiological factors:
  – shoulder pain is preventable, and,
  – the pain intensity can be much reduced if preventive measures are implemented (in case that pain already developed).
Common Preventive Measures against Shoulder Pain in Stroke

Preventive Measures

• Positioning
• Shoulder support
• Self assisted mobilization

Questions

• Are “at-risk” patients adequately screened?
• Are these measures adequately and properly be implemented?
• Any difficulties in implementing such measures?
Purpose

• To educate OT practitioners of the importance of taking preventive measures against shoulder pain in acute stroke patients;

• To set explicit standards for taking preventive measures;

• To compare existing practice with standards;

• To recommend actions for improvement accordingly if standards were not met.
Audit …

What is …

• A clinically-led initiative which seeks to improve quality and outcome of patient care through structured peer review whereby clinicians examine their practices and results against agreed explicit standards and modify their practice where indicated.

What is NOT …

• NOT efficacy study; not studying efficacy of any OT practice
• NOT a research project to compare the effectiveness of the different treatment modalities (preventive measures)
Aim of Audit...

- Apply existing evidence to improve practice among practitioners (within available resources).
- Reinforce compliance to agreed standard (standards compromised through peer review / literature search) for initiating necessary improvement.
- Communication was essential for the success
  - continued implementation of the standards
  - sharing with other nursing and medical colleagues for the better care of the stroke patients.
Methodology – 2 Phases

• Phase I
  – Through the peel review, with members from various centres, to set explicit standards in the area of practice
  – Developing audit protocol for phase II (based on Department of Clinical Audit Protocol, Brighton Health Center)

• Phase II
  – Implementing the audit exercise involving a random sample of 5% or 15 number of stroke patients for each participating centre;
  – Involving all the delegates to implement a jointed evaluation and make workable recommendation for improvement.
Subject Selection:
• Random selection from full patient list
• 5% or 15 no. (which no. was less)

Assessment of patients by Auditor:
• Functional level of UL: Is it at level 1 or 2
• Any complaint of pain

Preventive Measures Initiated?
Proper implementation?
Proper documentation?
Adequate communication / education?
Regular review?

Stop HERE
Result – Phase I

- 17 centers authorized delegates to participate

- 6 standards were established, taking into consideration of both
  - the available clinical evidence, and,
  - the potential environmental limitations of individual settings
Standard 1

- Stroke patients at risk of developing shoulder pain should be screened out for initiating necessary preventive measure; at risk refers to either functional level of 1 or 2 and/or complaint of pain

- (* Preventive measures refers to positioning, shoulder sling, self-assisted mobilization and any combinations of the above)

<table>
<thead>
<tr>
<th>Level</th>
<th>Task</th>
<th>Minimum Motion Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NIL</td>
<td>- No voluntary motion of the shoulder, elbow and hand</td>
</tr>
<tr>
<td>2</td>
<td>Associated reactions Hand Into Lap</td>
<td>- Some beginning voluntary motion of the shoulder and elbow</td>
</tr>
<tr>
<td>3</td>
<td>Arm clearance during shirt tuck Hold a Pouch</td>
<td>- Mass flexion pattern in the shoulder between 30 - 60 degrees and at the elbow between 60 - 100 degrees, gross grasp of 3 - 5 pounds</td>
</tr>
<tr>
<td>4</td>
<td>Stabilize a Jar Simulate “Wringing a Rag”</td>
<td>- Mass flexion &gt; 60 degrees at the shoulder and &gt; 100 degrees at the elbow, some elbow extension, 3 - 5 pounds of gross grasp and 1/2 to 3 pounds of lateral pinch</td>
</tr>
<tr>
<td>5</td>
<td>“Blocks and Box” Eat with a Spoon</td>
<td>- Beginning ability to combine components of strong mass flexion and strong mass extension patterns; greater than 5 pounds of grasp; greater than 3 pounds of lateral pinch and some release</td>
</tr>
<tr>
<td>6</td>
<td>“Box on Shelf” Drink from Glass</td>
<td>- Isolated control in the shoulder, elbow and wrist against gravity; full extension of the shoulder, elbow, wrist and fingers; greater than 5 pounds of grasp; greater than 3 pounds of lateral pinch; controlled and coordinated movements may be poor and sluggish</td>
</tr>
<tr>
<td>7</td>
<td>Key Turning Use Chopsticks (dominant hand)</td>
<td>- Isolated control of all upper extremity musculature with good coordination and control</td>
</tr>
</tbody>
</table>
Standard 2

• There should be proper documentation of each prescribed preventive measures, including a) start date, b) time regime, and c) procedures of application* on patient’s medical record aiming to improve communication.

• (*Procedures of application may be supplemented with printed pamphlet)

___ side shoulder sling prescribed

Issue date:

Application regime:

• sit upright □ ambulate □

Application method informed:

• - nurse □ carer □ patient □

Printed educational material given

• - Yes □ No □
Standard 3

- When a shoulder sling is prescribed it should fit the patient and be applied properly *not causing* venous occlusion and pressure area.
Standard 4

- When a shoulder sling is prescribed, carers* should be informed of the method of application

*both “formal” ones (nurses, health care workers) and “informal” ones (relatives)
Standard 5

- Patients and/or carers* should be supplied with printed material to reinforce their awareness of the preventive measures.

中風患者上肢的正確擺放

在中風的同時，手肘及手掌握握沒有運動能力時，維正不良姿勢及保護患肢是很重要。以下是日常活動中的正確的姿勢:

<table>
<thead>
<tr>
<th>躺臥</th>
<th>趴臥</th>
<th>站立</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 將小枕頭插入並疊在患肢腋下，平衡兩邊肩膀。&lt;br&gt;2. 前臂用方枕頭承托&lt;br&gt;3. 手腕及手指用手托承托。&lt;br&gt;4. 將方枕頭反向傾斜，令上臂向外旋。</td>
<td>1. 前臂用方枕頭承托或改用較大枕頭。&lt;br&gt;2. 手腕及手指用手托承托。</td>
<td>1. 身體不應壓住患肢。&lt;br&gt;2. 應將上臂外展，手掌向上。&lt;br&gt;3. 方枕頭和手托可隨時解除及保留。</td>
</tr>
<tr>
<td>1. 前臂用方枕頭承托。&lt;br&gt;2. 手腕及手指用手托承托。</td>
<td>坐</td>
<td>站立</td>
</tr>
</tbody>
</table>

如有查詢，請致電 31297126 / 31297130 保利治療師 先生 / 女士。
Standard 6

• For each prescribed measure it should be reviewed and documented in a 3-week period.
Result – Phase II

• 197 patients were recruited from the 17 centers for the audit exercise

• Compliance rates to the standards ranged from 33.3% to 100%
  – Standard 2 – not include all the requirement information in the documentation (but partial)
  – Standard 5 – some settings did not have printed handout
  – Standard 6 – with regular patient review but other aspects only, e.g. functional level. NO specific comment on the review of the preventive measures
<table>
<thead>
<tr>
<th>Setting code</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Subjects no.</th>
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<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
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<td>76.9</td>
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<td>30.8</td>
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<tr>
<td>16</td>
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<tr>
<td>17</td>
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<td>NA</td>
<td>NA</td>
<td>69.2</td>
<td>46.2</td>
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<tr>
<td>Overall</td>
<td>92.4</td>
<td>65.6</td>
<td>98</td>
<td>95.6</td>
<td>52.9</td>
<td>73.9</td>
<td>Total: 197</td>
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<tr>
<td>Range</td>
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<td>33.3 – 100</td>
<td>50 – 100</td>
<td>50 – 100</td>
<td>7.7 – 100</td>
<td>25 – 100</td>
<td></td>
</tr>
</tbody>
</table>

Table 2  % of Compliance to Respective Standards
Result – Phase II

• 100% compliance to the standards are plausible, as demonstrated in some settings.

• Remediation actions for settings not achieving 100% compliance:
  – Training session to frontline staff to ensure standards should be adhered (the importance of documentation and regular review)
  – Equipping adequate printed material
Lessons Learned

• Realistic goal; not cause much disturbance to clinical practice

• Clear roles among staff:
  – Manager – communicate to frontline staff of his concern
  – Center coordinators – communicate with frontline of operation details
  – COC Audit team – planning, overall evaluation, arrange support to small settings

• Adequate communication;
  – date of audit informed well in advance
  – Supportive attitude; for improvement but not finding faults

• Small settings being supported by other large institution, e.g. external auditor, pamphlet, education material
## Acknowledgment

<table>
<thead>
<tr>
<th>Hospital/Center</th>
<th>Center/Department</th>
<th>Contact Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shatin Hospital + GDH (Mr. Alex YU)</td>
<td>Fung Yiu Kin Hospital (Ms. Kania WAN)</td>
<td>United Christian Hospital + GDH (Ms. Peggie HUI)</td>
</tr>
<tr>
<td>Tai Po Hospital (Mr. Alex YU)</td>
<td>Princess Margaret Hospital (Ms. Elsa LEUNG)</td>
<td>Haven of Hope Hospital (Mr. Albert Tsui)</td>
</tr>
<tr>
<td>PYNEH (Ms. Carmen LUK)</td>
<td>Yan Chai Hospital (Ms. Vivian YUE)</td>
<td>Kowloon Hospital (Ms. Kathy CHOW)</td>
</tr>
<tr>
<td>North District Hospital (Mr. Alex YU)</td>
<td>Caritas Medical Centre (Ms. Sharron LEUNG),</td>
<td>Tung Wah Hospital (Ms. Connie LEE)</td>
</tr>
<tr>
<td>Queen Mary Hospital (Teresa KWOK)</td>
<td>Kwong Wah Hospital (Mr. Walter CHAN)</td>
<td>Wong Tai Sin Hospital (Ms. Elaine CHAN)</td>
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