Management of the Hemiplegic Arm: Implementing a Best Practice Protocol

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Jennifer Curry, PT
Objectives

• Provide tools for identifying best practice needs.

• Describe method to create action plan and implement change.

• Illustrate process of implementing best practice
Background


• The best practice guideline for acute care post stroke is management in an organized stroke unit by specially trained staff with the goal of preventing complications and ensuring early rehabilitation.

• The guidelines listed numerous complications including dysphagia and aspiration, deep vein thrombosis, depression and shoulder injuries.
Identifying Best Practice Gaps

• The interdisciplinary stroke team at London Health Sciences Centre - University Hospital held a retreat in May 2005.

• The retreat was facilitated by the Regional Stroke Education Coordinator.

• The team identified gaps between current practice and best practice guidelines.

• The gaps were then prioritized by the team.

• Working groups or subcommittees were formed for each of the prioritized gaps identified.
Hemiplegic Arm Subcommittee

• Team Members: Two Registered Nurses, an Occupational Therapist, a Physiotherapist, Regional Stroke Education Coordinator, Regional Rehab Coordinator.

• Reviewed a number of references (see Appendix 1) for best practice management of the hemiplegic arm.

• Determined that correct positioning and handling the hemiplegic arm using an interprofessional model was the priority.
Hemiplegic Arm Protocol Development

Questions to guide protocol development:

- What is the gap between the current practice and best practice?
- How will the gap be bridged?
- Who will champion the change in practice?
- What education will be needed to assist the change in practice?
Hemiplegic Arm Protocol Development

Questions continued:

- What resources (equipment and human) will be needed to assist the change in practice?

- How will the change in practice be evaluated?

- Are ethics approval required for implementation of the protocol?
Facilitating Change in Practice

Model of Improvement
Hemiplegic Shoulder Best Practice Positioning And Handling Protocol
Objective

The hemiplegic upper extremity will be protected from injury by being properly handled during mobility and transfers and properly positioned in bed or wheelchair, according to the positioning protocol diagrams for all patients meeting the criteria for the protocol.
Inclusion Criteria

- Hemiplegic arm is flaccid.
- And/or patient is unable to lift arm off bed to 90°.
- And/or the arm is painful.
Procedure

- OT, PT or RN assesses patients for protocol inclusion criteria
- Patients meeting criteria will receive:
  - A hemi sling at bedside
  - Hemi sling application directions posted at bedside
  - Eligibility for the protocol noted in the kardex
Hemi Sling Application

LEFT ARM SLING
To be worn during transfers and ambulation

- Slip arm through small loop to just below elbow.
- Keep left arm supported.
- Pull strap across back and over top of right shoulder keeping elbow firmly supported.
- Slide left hand into large loop so hand and wrist are supported.
- Adjust velcro fastening so hand is level with elbow and velcro is comfortable at side of neck.

London Health Sciences Centre

Stroke Network
Southwestern Ontario
Serving Erie St. Clair and South West LHINs
### Kardex

**GRAPHIC RECORD**
- Shift: "9 Shift"
- In: Date: 1/1/22
- Out: Date: 1/2/22

**ACTIVITY/MOBILITY**
- Partial Immobility
- Total Immobility
- Bedrest
- Bedrest & B.R.I.P.
- Requires Assistance
- Not Flexing
- P.O.W./Commode

**FLOW SHEETS**
- Intake
- Output
- Drain

**DIABETIC PROTOCOL**
- Anticoagulant Record
- Coumadin
- Heparin

**NUTRITION**
- Unassisted
- Assisted
- Total
- NG
- Feeding Tube

**SLEEP**
- Orientation X3
- X4
- +

**HYGIENE**
- Oral Care
-助 Bid

**SKIN CARE**
- Bed Sores
- ICOD
- Skin Condition

**SENSORY**
- Vision
- Reading glasses
- Hearing
- Speech

**RESPIRATORY**
- Oxygen
- Keep Sat

**TREATMENTS**
- See inside of Kardex

**SCHEDULED THERAPIES**
- PT X
- OT X
- Speech

**INTRAVENOUS THERAPY**
- P.H.
- C.T.

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**Name:** Mrs. T.B.
**Age:** 44
**ID No.:** 10011001
**Doctor:** Neurology

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**Hemi Arm Protocol**

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Procedure (cont’d)

• PT to assess transfer and post transfer card at bedside
• OT/OTA/PT/PTA to provide laptray and wheelchair for patients meeting criteria and who require assist with transfers
• PT to assess and document Chedoke McMaster Stroke Assessment (CMSA) shoulder pain score on admission and discharge
Lying On Hemiplegic Side
Lying on Unaffected Side
Sitting In Bed
Sitting In Wheelchair
Independent Transfer
Single Person Transfer
Two Person Transfer
2 Person Transfer-Transfer Belt
Protocol Synopsis

Hemi Arm Protocol

Who qualifies?
Any patient who has:
- Flaccid arm
- Inability to lift arm to 90 degrees when lying in the bed
- Painful shoulder or arm

Who assesses the patient for eligibility?
RN  OT  PT

What to do if patient requires hemi arm protocol:
Place “Hemi Arm Protocol” sticker in treatment section of Kardex.
Post or place the following at bedside:
  - Positioning of the hemiplegic arm photo page
  - Sling application diagram
  - Hemi sling
  - Lap tray (Best if combined with appropriate wheelchair which OT or PT will provide when equipment is available.)
  - Transfer card (PT to post once transfer assessed)
  - Assess Chedoke McMaster Shoulder Pain Inventory on admission and discharge (PT or OT to do).

Where to find the above items:
  - In clean equipment room in east hallway.
  - Look for clear container marked “hemi slings”.

Further Questions contact:  Jennifer Curry PT  Dalia Abromaitis OT  Sharon Wyville RN  Mary Thomas RN
Goals

• 100% of patients meeting the criteria will have:
  • Hemi sling at bedside
  • Hemi sling directions posted at bedside
  • Eligibility for protocol noted in kardex

• 100% of patients meeting protocol criteria and requiring assist for transfers will have a laptray and wheelchair assigned to them
Goals (cont’d)

• 100% of stroke patients will have CMSA shoulder pain score completed by PT on admission and discharge.

• 100% of CNS RN’s, OT’s, PT’s, OTA’s, PTA’s will be educated in the use and procedures contained in the protocol
Hemiplegic Arm Evaluation

• Audits
  • Conducted pre implementation and 1,2,7 and 8 months post implementation.
  • Patients identified from the OT/PT caseload.
  • Utilized PT student for the first audits and an RN student for the last two audits.
Hemiplegic Arm Evaluation

• Audit Content (see Appendix 3)
  • Check of Kardex for Hemi Arm sticker
  • Observation at bedside for:
    o Job aids (positioning diagrams, sling application diagrams and transfer cards)
    o Hemisling
    o Wheelchair
    o Position of patient
  • Interview of nurse re: use of job aids and barriers to implementation
  • Did not audit for CMSA score due to restrictions with time and health records.
## Results of Audit

<table>
<thead>
<tr>
<th></th>
<th>Pre Protocol</th>
<th>1 and 2 months post protocol</th>
<th>7 and 8 months post protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of Job Aids</td>
<td>50%</td>
<td>77%</td>
<td>80%</td>
</tr>
<tr>
<td>Provision of Equipment</td>
<td>43%</td>
<td>60%</td>
<td>85%</td>
</tr>
<tr>
<td>Positioning of Patient</td>
<td>40%</td>
<td>66%</td>
<td>50%</td>
</tr>
<tr>
<td>Comments</td>
<td>Transfer cards primary job aid used.</td>
<td>RNs report lack of equipment (pillows, wheelchairs).</td>
<td>RNs report lack of assistance to position and restless patients.</td>
</tr>
</tbody>
</table>
Hemiplegic Arm Education

- Developed presentation covering:
  - Anatomy of shoulder complex
  - Pathoanatomy of hemiplegic arm
  - Causes of hemiplegic shoulder pain
  - Management of hemiplegic arm
    - Hemiplegic Arm Protocol
    - Practical session of positioning, sling application and transfers
Hemiplegic Arm Education

- Inservice Education
  - Began education using this method
  - Given twice a month
  - Sessions lasted 30 minutes.

- Review of Effectiveness
  - Not effective use of time.
  - Lack of staff attendance as staff required for clinical duties.
Hemiplegic Arm Education

- **Formal Education**
  - Given concurrently with another stroke initiative teaching session.
  - Nurses paid to attend education session outside of working hours.
  - Focussed on education and had time to do practical session.
  - Able to educate 95% of current RN staff using this method.
Hemiplegic Arm Education

• Evaluation of Effectiveness
  • Evaluation of pre and post workshop knowledge and skill.
  • Evaluations rated knowledge of specific items or specific skills on a scale of 1 to 5.
  • See Appendix 2 for questionnaire given
  • RESULTS: Post workshop, the average showed an improvement in knowledge and skill by one mark on the rating scale.
Barriers to Implementation

- Lack of sufficient equipment:
  - Pillows
  - Appropriate wheelchairs
  - Slings
  - Laptrays

- Inconsistent orientation of new RN staff

- Lack of nurse champions for each shift and wing
Lessons Learned

• Timing of educational sessions relative to protocol implementation.

• Importance of RN “champions”.

• RN student auditor

• OT’s and PT’s initiating protocol

• Need for Right and Left Hemi pictures and sufficient quantities of pictures
Next Steps

- Audit completion of CMSA pain score.

- OT and PT to further assess our own practice (treatment) of hemi arm as well as role delineation.
Questions?