Care of the shoulder and upper limb

LEANNE YEOMAN

PHYSIOTHERAPIST, BRAIN INJURY REHABILITATION SERVICE, BURWOOD HOSPITAL
Objectives

- Review shoulder function
- Hemiplegic shoulder pain
- Management strategies
- National Stroke Network Upper Limb project group
- Viatherapy app
The Shoulder

STATIC STABILISERS

DYNAMIC STABILISERS

- Supraspinatus
- Teres Minor
- Subscapularis
- Infraspinatus
Scapulohumeral Rhythm
Hemiplegic Shoulder Pain (HSP)

**Soft Tissue Lesions**
- Rotator cuff and biceps tendon – tears, tendinopathies
- Bursitis
- Adhesive capsulitis
- Myofascial pain (trigger points)

**Impaired Motor Control** (muscle tone)
- Spasticity
- Flaccidity

**Altered Peripheral and Central Activity**
- Peripheral nerve entrapment
- Shoulder Hand Syndrome (CRPS)
- Central Sensitisation
- Central Post Stroke Pain
Factors contributing to HSP

- Older age
- Pre-existing shoulder pain/degeneration
- Left hemiplegia
- Neglect and sensory impairment
- Poor function
- Muscle imbalance
- ? Subluxation

- Iatrogenic – handling, exercises
Management options

**Arm Supports**

**Slings**

Systematic review (Nadler & Pauls, 2016):

- Subluxation is reduced while orthosis in situ
- Orthoses with only proximal support are less effective
- May improve shoulder pain
- No increase in incidence of contracture, spasticity

**Trays**
Management options

Positioning:
- Recommended towards abduction, external rotation, flexion (Bender & McKenna, 2001)
- Shoulder positioning programs do not prevent loss of ROM or improve pain
- Gentle stretching and joint stabilising therapies may improve arm function

Strapping:
- Some evidence that strapping can delay the onset of shoulder pain when used as prophylaxis, however does not decrease it

Active therapies:
- Aggressive ROM exercises or overhead pulleys result in increased rates of pain
Managing the hemiplegic shoulder

**Electrical Stimulation**
- Supraspinatus and posterior deltoid
- 6 hours/day, 5 days/week, 6 weeks
- Meta-analysis (Gu & Ran, 2016)
  - May prevent/reduce subluxation if used early
  - No evidence for effectiveness for pain, strength, functional use or quality of life
Management options

- Massage therapy
- Botulinum Toxin
- Mirror therapy
- Steroid Injections
Upper Limb Project Group

- Nationally consistent evidence-based guidance
- Appropriate for use in a range of NZ settings
- Not writing new guidelines – to sit alongside Stroke Guidelines etc
VIAsTHERAPY App

- Recommends interventions for upper limb rehabilitation post-stroke
- Algorithmic approach using best-evidence
  - Was the onset of stroke within the last 12 weeks?
  - Does the person have shoulder pain or are they at risk?
  - Can they produce voluntary muscle activity in the affected limb?
Upper Limb Project Group

- Competencies required
- Equipment needed
- Procedure – links, videos
- Inclusion/exclusion criteria
- Precautions
- Evidence
- Information for family/whanau

strokenetwork.org.nz
The importance of education

Patients/Carers

- Topics
  - Shoulder anatomy/function, causes of pain
  - Positioning
  - Supports – pros/cons, informed choices
  - Handling and exercises
  - Therapy options

- Importance of being provided with individualised information verbally and in writing (Hofsteinsdottir et al, 2011)

Health Professionals

- Evidence based practice – NZ Stroke Guidelines, EBRSR.com, viatherapy app
How to add VIAtherapy to your smartphone or tablet’s home screen

Apple iPhone, iPad or iPod touch
1. With the VIAtherapy web app open in Safari, find and tap the share icon at the bottom of your screen: iOS Share icon
If you don't see the icon, try swiping down to reveal the tool bar.
2. Tap Add to Home Screen and follow the on-screen instructions
3. Now you can open VIAtherapy using the icon added to your home screen:

Google Android
1. With the VIAtherapy web app open in Chrome, find and tap the more icon at the top of your screen: Android More icon
If you don't see the icon, try swiping down to reveal the tool bar.
2. Tap Add to Home Screen and follow the on-screen instructions
3. Now you can open VIAtherapy using the icon added to your home screen:

leeanne.yeoman@cdhb.health.nz
References

Ada L. Foongchomcheay A & Canning CG (2009) Supportive devices for preventing and treating subluxation of the shoulder after stroke. Cochrane Database of Systematic Reviews Issue 1


