Spasticity Management for Transverse Myelitis

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CME Disclosure

- Abobotulinum toxin A, incobotulinum toxin A, botulinum toxin B and phenol are not US Food and Drug Administration (FDA) approved for use in spasticity
  - Abobotulinum toxin A, incobotulinum toxin A, botulinum toxin B and phenol are not US Food and Drug Administration (FDA) approved for use in spasticity
  - Onabotulinum toxin A is only indicated for spasticity of the upper limb in adults

Objectives

- How do you assess spasticity?
- Distinguish between generalized and localized impairments
- Discuss treatment options for specific upper motor neuron syndromes

Consequences of Spasticity

- May interfere with mobility, exercise, joint range of motion
- May interfere with activities of daily living
- May cause pain and sleep disturbance
- Can make patient care more difficult

Possible Advantages of Spasticity

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- Maintains muscle tone
- Helps support circulatory function
- May prevent formation of deep vein thrombosis
- May assist in activities of daily living
- May assist in maintaining erect posture
- May assist in gait

Mechanical vs. Spastic Contracture

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Fixed

- Tendon and/or ligament
- Charcot joint
- Heterotopic ossification

Dynamic

- Slow stretch
- Palpable antagonistic muscle action
- Increased reflexes

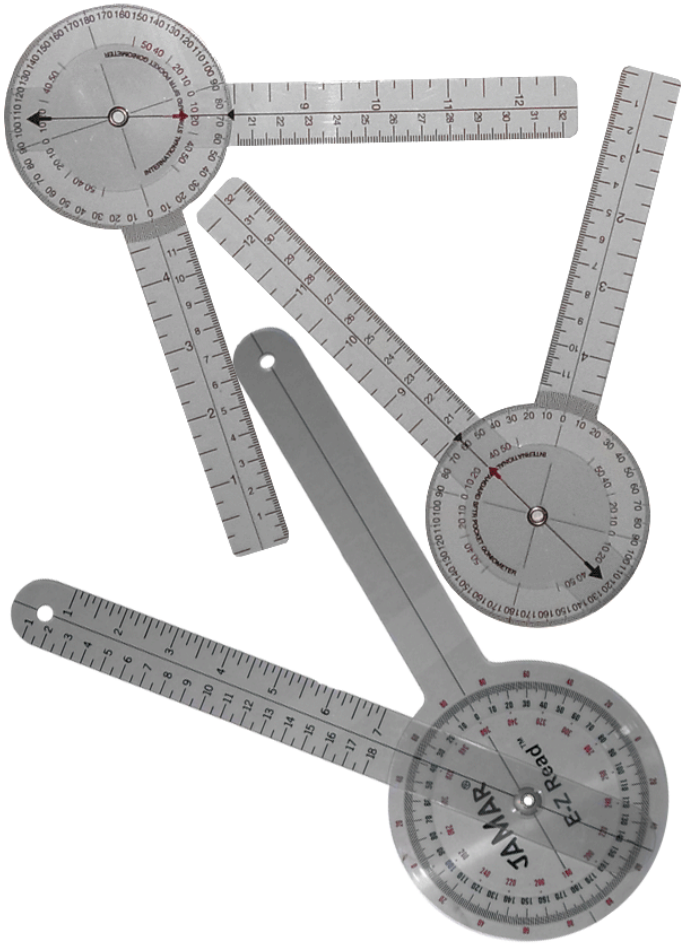
Most often, both mechanical and spastic factors

Key Questions in History

- Location?
- Time of day, aggravating/ alleviating factors? (diary)
- Painful spasms?
- Functional limitations?
- Need for extensor tone in legs for standing?

Physical Exam

- Standard musculoskeletal exam including range of motion (measured with a goniometer)
- Standard neurological exam
- Clonus
- Ashworth scale



Modified Ashworth Scale (MAS)

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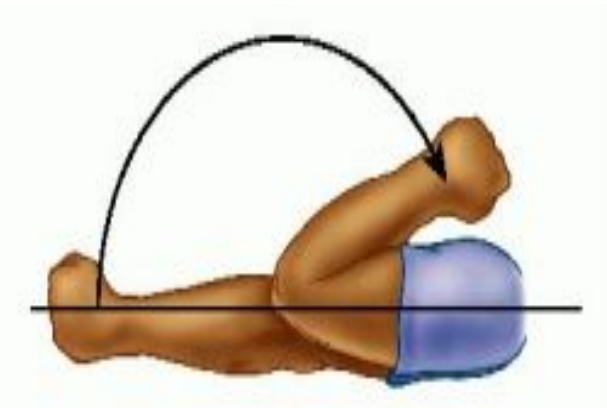
- 0 = Normal tone
- 1 = Slight “catch”
- 1+ = Significant “catch”
- 2 = Mild, limb moves easily
- 3 = Moderate, passive range o movement difficult
- 4 = Severe, rigid limb



Goal Attainment Scales

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- Select 2 SMART (specific, measurable, achievable, realistic, time-frame) goals with patient
  - -2 did not achieve by a lot
  - -1 did not achieve by a little
  - 0 achieved
  - +1 exceeded by a little
  - +2 exceeded by a lot

Spectrum of Care for Management of Spasticity

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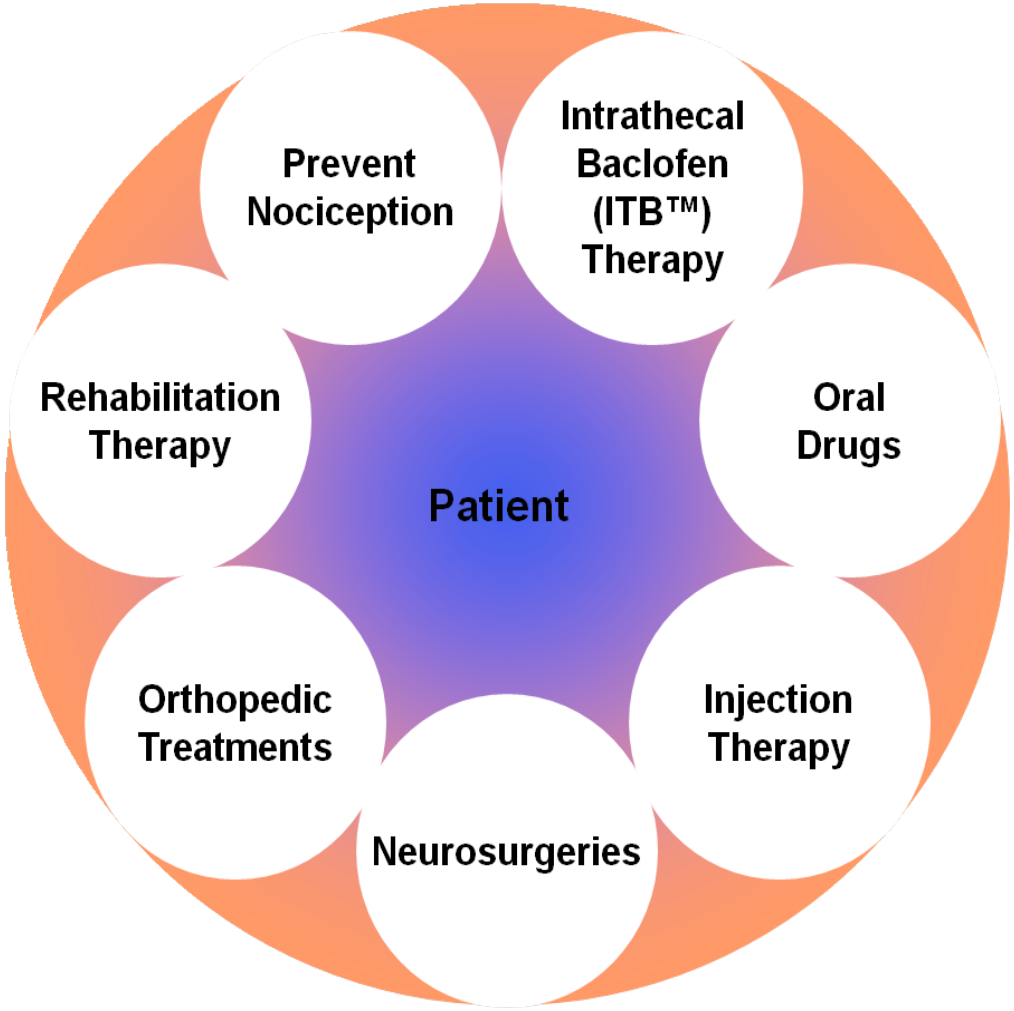
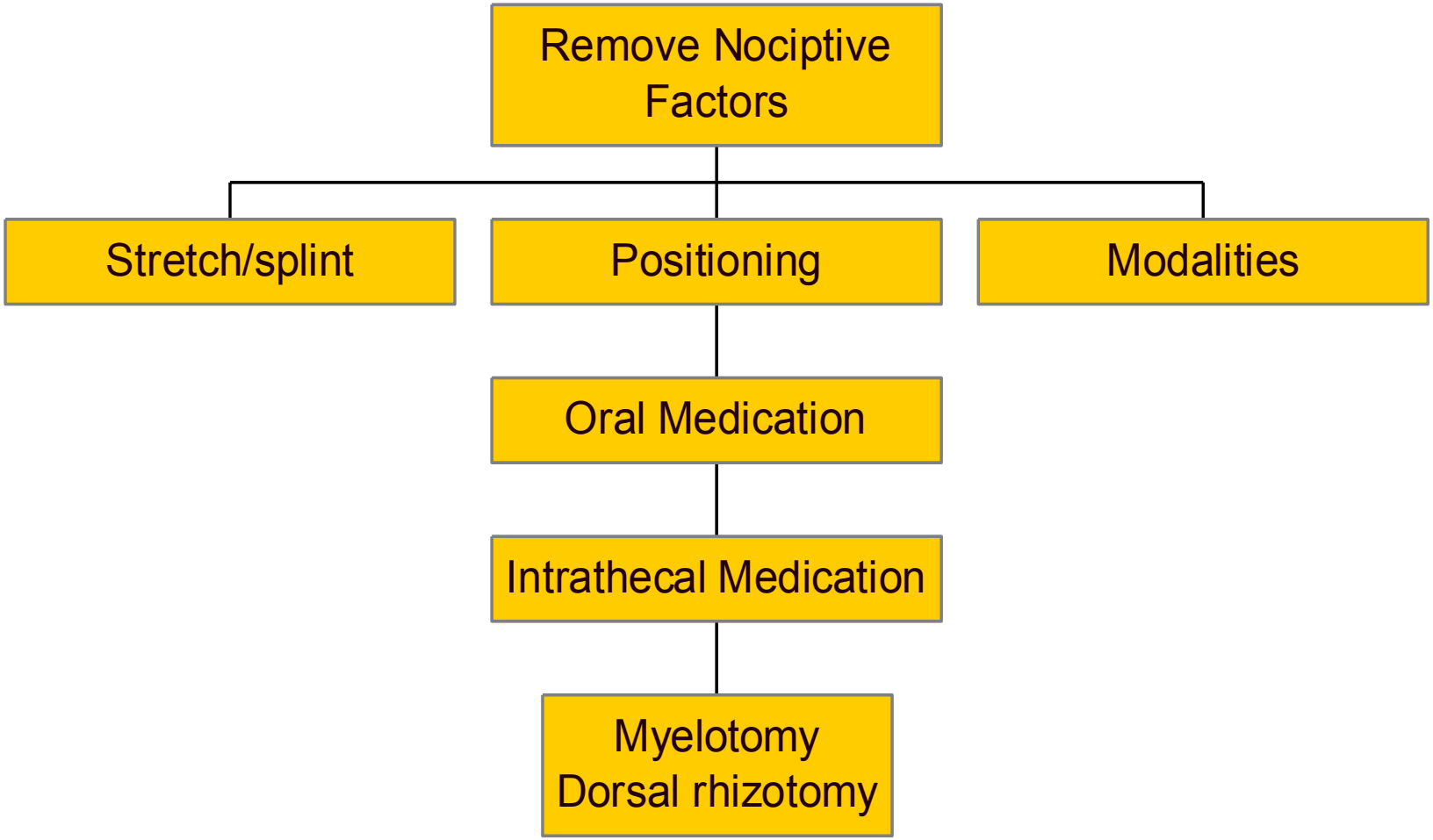
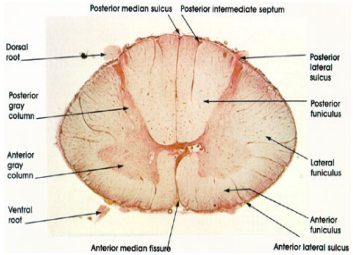


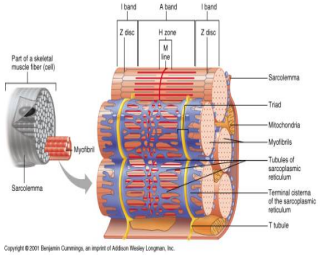
Generalized Spasticity (>2 limbs involved)



Oral Medications

- Baclofen
  - Works on spinal cord
- Tizanidine
  - Works on brain
- Dantrolene
  - Works on muscle

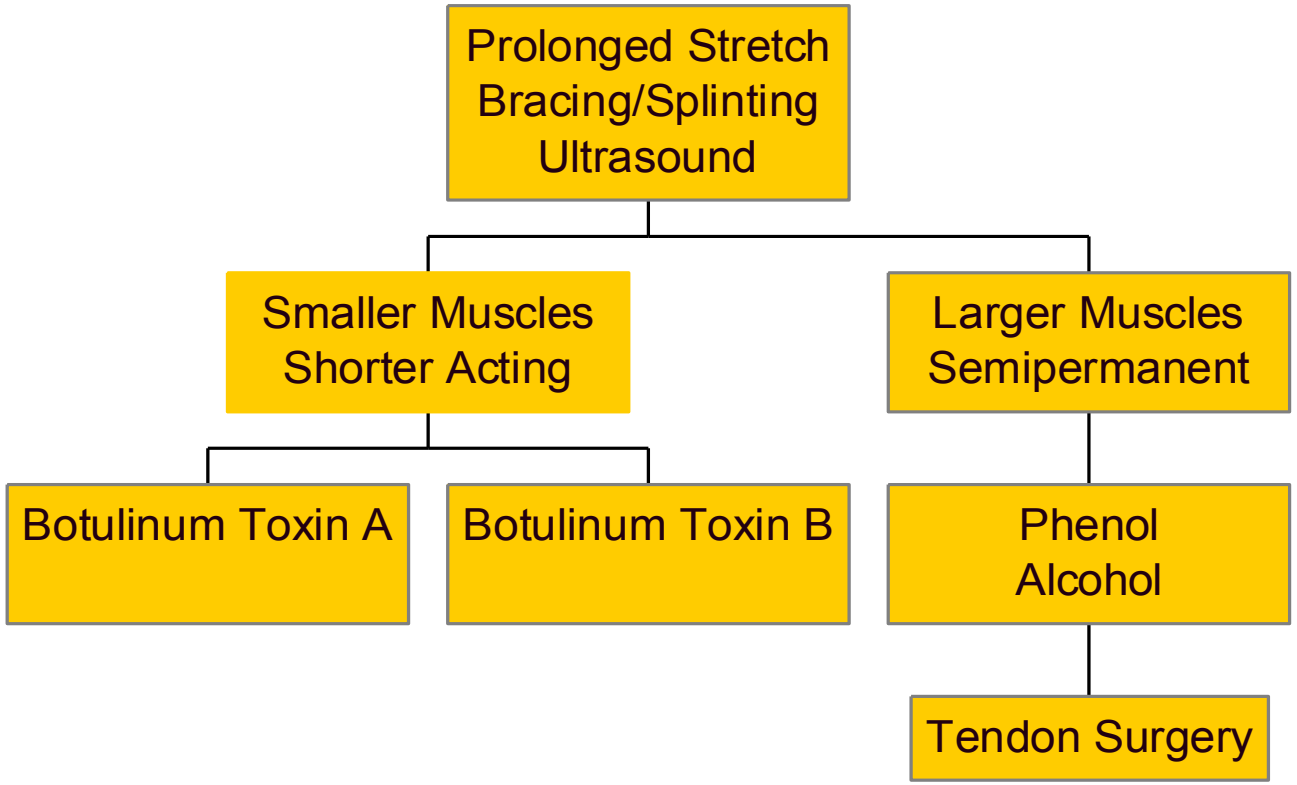




Intrathecal Baclofen

- Generalized spasticity
- Not controlled or side effects from oral meds
- Delivers @ 1/50 dose baclofen direct to cerebrospinal flluid
- Infinitely programmable
- Refill every 3 to 12 months
- Mechanical complications

Localized Spasticity



Onabotulinumtoxin A (Botox®), Abobotulinumtoxin A (Dysport®) , Incobutlinum toxin A (Xeomein)
Rimabotulinumtoxin B (Myobloc®)

Phenol and Alcohol

- Causes degeneration of both motor sensory fibers
- Can do nerve blocks in pure motor nerves, but avoid mixed or sensory nerves
- Motor point blocks
- Lasts 4 to 9 months

Phenol and Alcohol

- 100% effective in gastrocnemius injections for six months.
- 90% patients injected with alcohol had relief at nine months, 70% of those with phenol.

Kocabas H et al. Eu J Phys Med Rehabil 2010; 46: 5-10

Botulinum Toxins

- **Can be injected using anatomic landmarks or as motor point block**
- **4 formulations in US onabotulinum toxin A (Botox®) + abobotulinum toxin A (Dysport®), incoboutlinum toxin A (Xeomin®), and rimabotulinum toxin B (Myobloc®).**
- **Lasts 2 to 4 months**
- ***NOT* FDA approved for spasticity, except onabotulinum toxin A for upper limb only.**

Data Limited in TM and SCI

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- SCI only
- 1 trial 28 patients
- Lower limbs: 56% improved gait, 71% improved positioning.
- Upper limbs: 78% improved hand function, 66% improved hygiene, 80% improved pain