

## Nursing Aspects of Spasticity Care in the I/DD population

Mary Elizabeth S. Nelson  
MSN, ANP-BC  
Nurse Practitioner

## Spasticity program



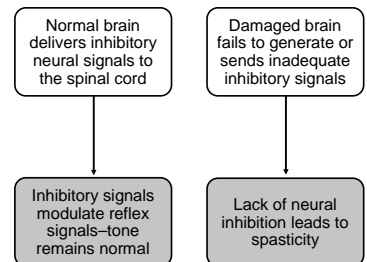
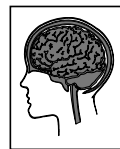
- What is spasticity?
- Why treat spasticity?
- Considerations in I/DD population
- Assessment & management
- Nurse as advocate for I/DD patient with spasticity

## Pathophysiology of Spasticity

### Theory

- Imbalance between excitatory and inhibitory impulses to the alpha motor neuron
- Due to a lack of descending inhibitory input to the alpha motor neuron
- Velocity-dependent increased resistance to passive stretch

## Pathophysiology of Cerebral Origin Spasticity



## Symptoms of Spasticity

Altered Mobility	Altered Comfort	Bowel/Bladder Dysfunction
Fatigue & Depression	Sleep Disturbance	Decreased Productivity
Social Isolation	Cognitive or Emotional Problems	Sexual Dysfunction

## Clinical Signs of Spasticity

- Hyperactive reflexes
- Muscle spasms
- Clonus
- Pain
- Impaired voluntary control of skeletal muscles
- Orthopedic changes in joints



Slide courtesy of Medtronic Neurological

## Common patterns of upper motor neuron dysfunction



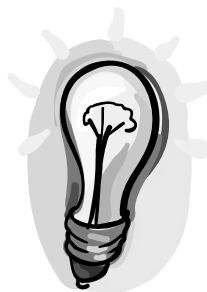
## Symptom management

- POSITIVE
- Increased tone
- Exaggerated reflexes
- NEGATIVE
- Spastic tone
- Weakness
- Slowed movement
- Loss of selective control

## Spasticity Benefits

- Stability in sitting or standing
- Assists with transfers
- Prevention of edema
- Prevention of DVT
- Awareness of noxious stimuli
- Improves cough strength
- Improves venous return

## Treatment Goals



- Decrease Pain
- Improve Functioning
- Prevent Complications (pressure ulcers, hygiene problems, contractures, depression)
- Improve QOL

## Challenges in I/DD population

- Patients may have difficulty communicating symptoms
- Patients may be resistant to participating in treatment
- Already at high risk for:
  - Pressure sores
  - Constipation
  - Weakness, especially in Spina Bifida
  - Nutritional status issues
  - Seizures
  - Respiratory issues
  - Orthopedic issues
  - GERD

## Assessment and Management as a nursing role

- Nurses are key player in managing patients spasticity
- Primary communicator to patient/family/medical team
- Must have “buy in” from care team to have successful outcomes
- Outcomes are difficult to measure in clinic: include QOL, ease of cares, mobility, positioning, hygiene

### Nursing practice interventions for spasticity

- ROM with ADL's
- Repositioning into side lying and prone positioning to encourage stretch
- Encouraging stretching in daily care routine
- Massage techniques and warm and cold therapy
- Application of splints/braces
- Seating assessment and management

### Nursing interventions continued

- Medication management
- Bowel routines
- Elimination of noxious stimuli
- Promote sleep hygiene
- Pain management techniques
- Promote nutrition
- Patient, family and other caregiver education

### Factors That May Increase Spasticity

#### **Uncontrollable**

- Urinary tract infection
- Kidney stones
- Menses
- Bowel impaction or gas
- Deep vein thrombosis
- Pneumonia
- Wounds or infections
- Progression of disease

#### **Controllable**

- Stress
- Ingrown nails
- Restrictive clothing
- Fatigue
- Psychological factors
- Change in temperature or humidity

### Therapeutic Options

- Elimination of aggravating factors
- Mechanical interventions
- Oral pharmacotherapy
- Chemodenervation
- Intrathecal medications
- Surgery

### Site of Action for Oral Drugs

#### **Drug**

Baclofen:

Diazepam:

Dantrolene Sodium:

Tizanidine:

#### **Site of action**

GABA<sub>b</sub> receptors in spinal cord

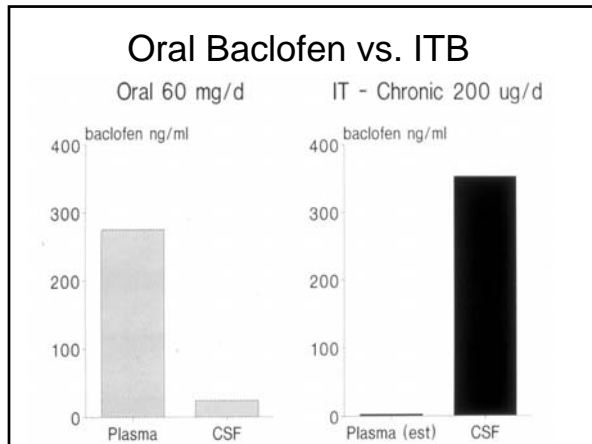
Central nervous system

Skeletal muscles beyond the myoneural junction

Central acting (spinal and supraspinal) at alpha<sub>2</sub> – adrenergic receptor sites

### Benefits of ITB

- Minimizes effects of oral therapy -lethargy, drowsiness, confusion.
- May eliminate need for other spasticity meds.
- Can be used in combination with oral or chemodenervation therapy.
- Can be programmed to patients own schedule.



### Recognizing spasticity as an issue

- Nurses are the single most important team member for recognizing spasticity in those with I/DD
- During medical evaluation, team is looking for your input into how spasms/tone affect daily life for patient
- Need to communicate the impact spasticity has on patients life

### Tips for communicating to providers

- Identify if spasms/tone limit:
  - ROM, affecting ability to position, transfer, ambulate
  - Affect sleep
  - Cause pain
  - Ability to perform hygiene
  - Ability to be independent with cares, require specialty ADL equipment, braces/splints
  - Affects fit of orthotics

### Nurse Advocate

- Spasticity management is QOL management. Outline what patients daily activities are.
- Communicate any recent therapy. Regular therapy is important.
- Other medications can affect spasticity, keep a list.
- Bring braces/splints and regular seating to clinic.
- Request adaptive equipment to encourage independence and hygiene.