Pain in Multiple Sclerosis

A Biopsychosocial Approach to Management

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Overview and Objectives
Application of a multimodal approach to pain in MS

- Knowledge of the pain experience in multiple sclerosis
- Recognizing pharmaceutical tailoring in MS pain
  - Overview of current drugs
  - Recognition of the role of opioids in neuropathic pain
- Ability to integrate biopsychosocial and spiritual models into practice
  - Recognizing psychological influences on pain intensity
  - Building self-management strategies
- Understanding the evolution of cannabis use in MS pain
Epidemiology of MS Pain

- Pain in MS understood since 1875
- Prevalence of MS pain – 63%  
  (Foley, Vesterinen, Laird et al., 2013)  
  - Systematic review and meta-analysis  
  - Pain is heterogeneous  
  - Neuropathic pain (28.5%) more prevalent than nociceptive pain (18.2%)  
- Most common pain syndrome: headache; extremity neuropathic pain; back pain; painful tonic spasms; Lhermitte sign and trigeminal neuralgia  
  (Foley et al., 2013; Solaro et al., 2004; Moulin et al, 1987; Pollmann et al, 2004)

Risk Factors for MS Pain

(Kalia & O’Connor, 2005; Boneschi, 2008; Ehde, 2006; Foley et al., 2013; Hadjmichael et al, 2007; Nurmikko, 2010; Stenager, 1995, Solaro 2004; Jensen 2011)

- older age  
- Incidence at disease onset  
- longer disease duration- (contradict Foley findings-decreases over time)  
- lower education level  
- greater duration of pain  
- Increased disability (musculoskeletal pain-contradict Foley findings)  
- progressive course (dysesthetic pain and spasm)  
- depression or mental health impairment  
- Being female (headache pain; incr. intensity)  
- Experienced in multiple sites…more severe, more sites
Pain Experience in MS

- Linked to adverse outcomes
  - Poorer quality of life (Svendsen, 2005; Solaro 2013) and general poor health (Osbourne, 2006, 2007)
  - Greater disability (Archibald, 1994)
  - Associated with relapse (Ergun et al., 2009)
  - Greater pain intensity, and poorer physical and emotional health (Hirsch et al., 2009)
  - Decrease in employment rate (Shahrbanian et al., 2013)
  - Greater health-care utilization; greater medication use; less satisfaction with tx. (Hadjimichael et al., 2007; Solaro, 2013)

Pain Impact in MS

- Psychosocial and psychological factors have greater impact than other variables on pain intensity (Jensen et al., 2011 & 2010; Osbourne et al., 2006; Hirsch, 2009; Archibald et al, 1994; Kalia & O’Connor, 2005; Solaro, 2013)
  - Associated with increased fatigue
  - Associated with functional interference
  - Anxiety
  - Depression
  - Associated with greater dysfunction and disability
  - Social support enhanced pain coping

- Insufficiently treated (Pollmann, 2004; O’Connor et al. 2008; Kalman et al. 2002; Truini et al. 2011)
Pain (Merskey, H., & Bogduk, N., 1994)

- Pain is an individualistic, physiologic, learned and social response to a noxious stimuli
- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage

Pain is…

“Whatever the experiencing person says it is, existing whenever he/she says it does” (McCaffery, 1984)
MS Pain is Mixed

**Nociceptive:** Pain of the disability of living with MS; due to the indirect consequence of lesion
- Caused by true or potential tissue damaging stimuli: may be inflammatory
  - Example: pain of optic neuritis; postural anomalies, osteoporosis r/t steroids; headache, treatment induced pain (Truini et al., 2013)

**Central neuropathic pain (CNP):** Pain arising directly from a lesion or disease affecting the somatosensory system (O'Connor et al, 2008)
- may be intermittent or steady
- may be spontaneous or evoked
  - Steady pain: burning, tingling, aching, throbbing (dysesthetic extremity pain)
  - Intermittent: shooting, stabbing, electric knife-like, searing (trigeminal neuralgia)


Continuous MS Pain Syndromes

**Ongoing (dysesthetic) extremity pain**
- Persistent burning, tingling dull, nagging, prickling; legs and feet; may r/t cord lesion
- bilateral; prevalence, 12-28%; more common in PPMS, PRMS
- Worse at night; after exercise; worse with temp changes

**Musculoskeletal pain**
- Excessive work of muscle, joint stress
- Postural abnormalities; reduced elasticity of tendons
- 12-18% lifetime prevalence rates LBP

**Spasticity** (affects 50-60%)
- Pain from prolonged abnormal contraction
- Plaques in C-T cord

IASP 2014

Truini, 2013
Intermittent MS Pain Syndromes (paroxysmal)

- Trigeminal neuralgia
  - 20X general population
  - 2-5% typical TN; 11-31% are bilateral
- Glossopharyngeal neuralgia (rare)
- Episodic facial pain
- Paroxysmal limb pain
- Painful tonic spasms (6-11%); more common SPMS
- Headache (prevalence: 13%-64%; 3X> than gen pop; midbrain lesion)
- Lhermitte’s (prevalence 9-41%; plaque in dorsal cervical cord)

Pain Assessment

Self-report of pain is single most reliable indicator of pain

- Brief Pain Inventory for pain interference
  - 12-item: general activity; mood; mobility; normal work; relations; sleep; enjoyment of life; self-care; recreational & social activities; communication with others; learning new skills (Osbourne, 2006)
- Numeric rating scales for pain severity-cut points for mild (0-4), moderate (5-6), severe (7-10) (Alschuler, 2012)
- Cognitive impairment limits use of pain scales (Ferrell, 2000)
Pain Behavior Measures

• Functional outcomes
  • Increase mood, sleep
  • Ability to walk and move around
  • improved relationships
  • Ability to work and recreate
  • Enjoyment of life

• Self-report measure (PaB-SR) (Cook et al. 2013)
  • 20 items
  • Represents universe of self-report pain behaviors

Pain Experience

• Different patients experience different levels of pain in response to comparable stimuli

• Heredity, energy level, coping skills, prior pain experience-variation in tolerance

• Patients with chronic pain are more sensitive to pain and other stimuli

• Pain is a sensory, motivational and cognitive experience
Pain is Multidimensional

- Sensory discriminative
- Motivational/Affective
- Cognitive/evaluative