Non-Pharmacological Alternatives to Opioids
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Chronic pain: Millions suffer, missing non-drug options
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Many people with chronic pain are terrified that if they move, they will damage themselves further. But nothing could be further from the truth.

What is chronic pain?
Chronic pain is not just acute pain that doesn’t go away.

It can literally shrink the brain, reducing the volume of gray matter as much as 20 years of aging, as researchers from Northwestern University have shown. Chronic pain can become not just a symptom of something else, but a transformation of a normal nervous system into a runaway, self-propelled freight train, in which the body no longer needs an injury to trigger pain -- rewired nerves do it all by themselves.

Chief among these is anxiety. To be sure, many people with chronic pain are terrified that if they move, they will damage themselves further, a problem technically called kinesiophobia — fear of movement. But nothing could be further from the truth.
Objectives

- Understand our goals for pain management
- Medication Review (5 min)
- Non-medication options for treatment of Pain
- How to Discuss Opioid Taper
- Behavioral Approaches to Pain

Special Notes

- A history of Addiction does not preclude patients from being candidate for pain management referral
- In general the patient will not receive opioids as a part of their treatment in pain management clinics
  - If you refer your patient with a history of addiction to us, please let them know prior to their visit that opioids will not be a part of the plan
- Most pain physicians are not addiction physicians
  - We do not prescribe Suboxone or Methadone for addiction
  - There are some exceptions (i.e. some pain physicians also practice addiction medicine)
What Is My Goal For Pain “Management”?

- Functional rehabilitation or maintenance of function
- “Function”
  - Performance of activities of daily living
  - Maintenance of a health
  - Maintenance of employment or return to employment
- Removal or lessening of pain can be a barrier

Non-opioid Pain Management

- Minimally Invasive
  - Injections, neuroablutions, intradiscal procedures
- Surgical
  - Decompression, fusion, disc arthroplasty, reconstruction, spinal cord stimulator
- Noninvasive
  - NSAIDs, Opioids, muscle relaxants, corticosteroids, antineuropathics, SSRIs/SNRIs, topicals
  - Physical therapy
  - Pain psychology, biofeedback
  - Acupuncture, massage, diet, TENS
  - Spinal manipulation
Non-opioid Medications

- **NSAIDs**
  - Meloxicam, celecoxib, ibuprofen, diclofenac, naproxen
- **Muscle relaxants**
  - Baclofen, cyclobenzaprine, metaxalone, methocarbamol, tizanidine
- **Corticosteroids**
- **Anti-depressants**
  - Duloxetine, venlafaxine, TCAs
- **Topicals**
  - Lidocaine ointment/patch, diclofenac gel/patch, compound cream
- **Anti-convulsants**
  - Gabapentin, pregabalin, topiramate, divalproex, carbamazepine, oxycarbamazepine, zonisamide
- **Others**
  - Low Dose Naltrexone, Ketamine**

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Key TIPS In Treating With Anticonvulsants/ AntiDepressants

- Set Expectations
  - Relief you expect the patient to get
  - Goals
  - Pain relief will not happen overnight
  - Side Effects are common many improve
- Dosing, Dosing, Dosing
  - Remember your patient
- Follow progress/compliance
- More information at the end of presentation
Interventional Procedures

- Radicular leg/arm pain
  - Epidural Steroid Injections
  - Best used to treat radicular symptoms seen with HNP or neurogenic claudication seen with spinal stenosis
  - Spinal Cord Stimulation
- Axial Low Back pain
  - Medial Branch Blocks/Radiofrequency Ablation
    - Used to treat facet-mediated pain
  - Trigger Point injections
  - SI Joint Injection
  - Spinal Cord Stimulation*

More Interventional Procedures

- CPRS
  - Lumbar Sympathetic Nerve Block
  - Stellate Ganglion Nerve Block
  - Spinal Cord Stimulation

* Hunton. Spinal injections and peripheral nerve blocks. 2014
And More Interventional Procedures

- Headache
  - Occipital Nerve Block
  - Botox
  - Sphenopalatine ganglion (SPG) nerve block
  - Supraorbital Nerve block
  - Cervical TON&MBB/Radiofrequency Ablation

Still More Interventional Procedures

- Knee Pain
  - Steroid Injections
  - Hyaluronic Acid Injections
  - Genicular nerve block
  - Treat knee pain refractory to surgery or intra-articular injections

- Hip Pain
  - intra-articular joint injections
  - Obturator nerve block
  - Treat hip pain refractory to surgery or intra-articular injections


Interventional Procedures

- Post-Herpetic Neuralgia
  - ESI
- Intercostal Nerve Blocks
- Facial Blocks as appropriate
- Trigeminal Neuralgia
  - Trigeminal Nerve block
- Peripheral Neuralgias
  - Lateral Femoral Cutaneous Nerve Block
  - Ilioinguinal Nerve Block


Spinal Cord Stimulation

- Indications
  - Failed Back/Neck Surgery Syndrome
  - Angina
  - CRPS
  - Peripheral Neuropathy
  - Lumbar radiculopathy/radicular pain
  - Peripheral Neuropathy
  - Post-Herpetic Neuralgia
  - Ischemic Pain

### Take Home Messages For Prescribing Physicians

- Seek alternatives EARLY
- Pts with a history of addiction still can be treated by pain management
- Medications options (may) fail because they have not been given enough time or an appropriate dose
- Interventional Options –more than just epidurals

### Overview

- Overview
  - Making the case to the patient
    - Opioid Induced Hyperalgesia
    - Expectations and options
  - Opioid and Alcohol and Other Drug Abuse (AODA) treatments
  - Behavioral approaches to pain management
Now For A Shift

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Opioid-Induced Hyperalgesia (OIH)

- Opioid therapy can cause this condition, which results in heightened sensitivity to pain
- OIH occurs when increased use of opioids (e.g., morphine, oxycodone, hydrocodone) results in a reduced tolerance for pain and an increased sensitivity to discomfort
- Chronic pain sufferers may not understand that this is happening and may seek to increase their dosage

OIH

- Patients, and even some providers, still think that raising the opioid dose will manage increasing pain levels
- It is not intuitive for patients to suggest dose reduction
  - Explain OIH to increase understanding of the need for a taper
- Be honest with patients
  - Let them know that pain will likely worsen before it improves and that tapers are not easy
- Tapers may be accomplished rapidly, moderately, or slowly depending on the situation
- After the taper, most patients report that:
  - Pain is no worse or even better
  - They are able to engage in their lives and relationships again

Other Reasons for Opioid Tapers

- Dose is too high to be safely tolerated
- HX or development of substance abuse issues
- Patient may be taking other medications that make opioid medication more risky, such as benzodiazepines
- Patient may be referred on high doses and provider may not be comfortable with taking over the prescribing

Provider Skills

- Establishing rapport
- Listening skills
- Serving as an educator
- Providing reassurance
- Explaining the plan and helping the patient feel less vulnerable
- Understanding the patient’s fears and concerns


Talking to the Patient about OIH or a Taper

- Confusion and questions
  - Patients may say:
    - “Why is this an issue now? I’ve been safely taking this for years.”
    - “Is it the government making you do this?”
    - “Are you saying that you think I’m an addict or drug seeker?”
    - “How do you plan to control my pain now?”

- Emotions abound:
  - Anger
  - Tears
  - Fears

Setting Expectations

- Reasonable expectations
  - We are talking about pain management, likely not pain elimination
  - The patient is not alone: support will be provided
- The time element: might be worse before it is better
- Set the expectation of a new and different way to manage pain, which could include multiple options:
  - Other medications (NSAIDs, topical agents, TCAs, SSRIs, SNRIs, muscle relaxers, anticonvulsants, etc.)
  - Procedures
  - Integrative approaches
  - CBT
  - Devices
  - Self-care by patient
- Sell the ideal of a sense of internal control on the part of the patient

Some Patients May Have an Addiction to Manage

- IOP program or PHP
- After-care programs (extremely important)
- Individual therapy with an AODA counselor
- Inpatient detox

AODA treatment approaches

- AA, NA, SMART Recovery, & other support strategies

IOP=intensive out-patient program
PHP=partial hospitalization program
Case

- 24-year-old Hispanic female with fibromyalgia and Ehlers-Danlos syndrome.
- Long-term opioid use (multiple opioids tried) with increasing demands to increase dose.
- Social issues:
  - Patient is very demanding and rude to providers.
  - Family enabled patient to calm her mood.
  - Patient is time consuming to provider/s.

Case

- Didn’t tolerate outpatient taper well:
  - Was sent to inpatient detox.
  - Took everything she had on hand before scheduled admission.
  - Fought the detox, but after 6-7 days was discharged on no opioids or benzodiazepines and withdrawal symptoms well managed.
- At 2-week follow up admitted that:
  - Pain was no worse than when on high-dose opioids.
  - She had more energy and could think more clearly.
**Integrative Approaches to Pain Management in the Mental Health Area**

- Acupuncture, massage, & chiropractic
- CBT
- Guided imagery, hypnosis, & mindfulness
- Sleep enhancement
- Stress management
- CBT
- Lifestyle enhancement & balance
- Biofeedback and use of Apps
- Nutrition & diet
- Exercise & movement

**Cognitive Behavior Therapy (CBT)**

- A form of therapy that uses the link between thoughts and behaviors to change feelings, practices, and/or behaviors
- One of the most useful non-procedure approaches to aiding management of chronic pain
- There are variations of CBT with empirical evidence to support benefit

Variations of CBT

- Acceptance and commitment therapy (ACT)
  - Makes use of CBT approaches
  - Teaches patient skills for coping
- Dialectic behavior therapy (DBT)
  - Utilizes CBT approaches
  - Employs skills
    - Mindfulness
    - Distress tolerance
    - Emotional regulation
    - Interpersonal effectiveness


Variations of CBT

- Behavioral Activation (BA)
  - Developed to treat depression, which is often co-morbid with pain
  - Treats inertia, avoidance, and is generally short term
- Motivational Interviewing (MI)
  - Has gained favor in the treatment of substance abuse
  - A therapeutic approach that attempts to move an individual away from a state of indecision or uncertainty and towards finding motivation to making positive decisions and accomplishing established goals
  - Allows the therapist to work with the patient in a collaborative manner and places the power with the client

Biofeedback and Use of Apps

- Biofeedback
  - Galvanic skin response (GSR)
  - Thermal biofeedback
  - Electromyogram (EMG) biofeedback
  - Heart rate variability (HRV) biofeedback

- Apps
  - Relaxation and imagery
  - Exercise, yoga, and movement
  - Mindfulness and meditation
  - Apps to be used with biofeedback programs
  - Apps to provide reminders related to lifestyle and tracking progress


Biofeedback

- Equipment is reasonably priced and home units are available
- Biofeedback focuses on reduction of sympathetic nervous system arousal
- Very little downside and essentially no negative side effects
- A level of commitment is required from the patient
  - Patients who demonstrate commitment often gain a sense of control
Clinic Biofeedback Experience

- Using a HRV biofeedback approach with chronic pain patients
- After just 3 biofeedback sessions patients consistently reported reduction in both pain and distress from the beginning to the end of the session
- After completing 3 biofeedback sessions there was a significant reduction in pain catastrophizing as measure by the Pain Catastrophizing Scale

Guided Imagery and Hypnosis

- Generally pleasant and entertaining
- Easy to participate in for most patients
- Involves guiding patient through use of their imagination to relax and reduce pain
- An inexpensive approach to:
  - Reduce dependence on medication
  - Reduce pain levels
  - Increase coping
- Can be supported by:
  - Imagery recordings made during the session for home practice
  - Recordings made by provider
  - Recordings available for purchase

Mindfulness

- Mindfulness and meditation: a mind-body experience
  - Involves learning to calm the mind without judgment and being open to the experience
  - Involves self compassion and acceptance
  - Utilizes a mindful body scan that teaches how to lean gently into discomfort
  - This seems counter-intuitive, however, it reduces the unwelcome sensations' power to derail patients experiencing pain
  - Literature is impressive regarding efficacy in treating pain


Lifestyle

- Breath work:
  - e.g., the 4-7-8 breath: breathe in for count of 4, hold for count of 7, and out for count of 8

- Sleep hygiene:
  - Improving sleep is a powerful way to manage pain and the fatigue associated with poor sleep

- Diet and weight control:
  - Lack of activity and medication side effects associated with weight gain in pain patients
  - A healthy diet increases energy and reduces weight gain

- Exercise and movement:
  - So important yet such a challenge

- Smoking cessation:
  - Benefits of smoking cessation extremely impressive in multiple areas

- Stress management:
  - Reducing stress when possible and managing the stress that can't be changed

- Self care:
  - Encouraging self care gives patient a sense of control and self worth

- Pacing:
  - Learning to avoid overdoing it while at the same time being engaged
Sample Integrated Approach for a Fibromyalgia Patient

- Physician to offer:
  - Other medication options: SNRIs, TCAs, neuromodulators, etc.
  - Therapies: PT, OT, hydrotherapy, etc.
  - Procedures
- Lifestyle:
  - Nutrition consult
  - Pacing of activities
  - Movement activities such as exercise, yoga, tai chi, etc.

- Mental health to offer options such as:
  - CBT
  - Stress management
  - Biofeedback
  - Motivational approaches
  - Mindfulness
  - Imagery
  - Pacing

OT=occupational therapy
PT=physical therapy

Summary and Recommendations

- Patients are often scared and feel desperate
- Desperate people say and do desperate things
- Provider’s approach is invaluable
- Expectations should be clear and reasonable and may need to be repeated or provided in written form
- The patient needs a plan or fear is increased, which escalates the problem
- An integrated approach with patient buy in and active participation can result in not only improved pain control, but enhanced quality of life for the patient
Further Information Regarding Medications

- Set Expectations
  - Relief you expect the patient to get
  - Goals
  - Pain relief will not happen overnight
  - Side Effects are common many improve
- Dosing, Dosing, Dosing
  - Remember your patient
- Follow progress/compliance

Gabapentin/Lyrica

- Mechanism: exact mechanism unknown, alter Na⁺ and Ca²⁺ influx, works at voltage gated calcium channels
- Uses: Neuropathic Pain, Fibromyalgia, Headache
- Side Effects: Sedation, edema, dizziness, mood change, depression
- Dose reduce in renal impairment

- Gabapentin
  - Dose range: 900-3600 mg/day
  - Start with dose 300mg/day
  - May titrate up every 2-3 days
- Pregabalin
  - Dose range: 150mg – 600mg daily
  - Initial dosing: 50mg tid or 75mg bid
  - Titrate every 3-7 days

Pain 2007;132:237-251
Carbamazepine/Oxycarbazepine

- **Mechanisms of action:** Central (partly due to A1/A2 receptor and GABA) and peripheral anti-nociception (A1/A2 receptors), Decreases Na⁺ and K⁺ conductance
- **Uses:** Trigeminal Neuralgia, Atypical Facial Pain, Headache, neuropathic pain
- **Dosing:**
  - Carbamazepine: start 100 mg PO BID, increase up to 400mg BID
  - Oxycarbazepine: start at 300 mg BID, increase to max of 1200 mg BID
- **Side Effects**
  - Cardiovascular: AV block, CHF, Syncope
    - Hypertension, Hypotension, Lightheadedness
  - Dermatologic: Stevens-Johnson syndrome, Toxic epidermal necrolysis
    - Erythematous condition, Photosensitivity, Pruritic rash, Urticaria
  - Gastrointestinal: Nausea, Vomiting
  - Neurologic: Clumsiness, Confusion, Dizziness, Nystagmus, Somnolence (11% withdrawal)
  - Ophthalmic: Blurred vision, Diplopia
  - Endocrine: Hypocalcemia, Hyponatremia, SIADH
  - Hematologic: Agranulocytosis, Aplastic anemia, Drug-induced eosinophilia, Leukocytosis, Leukopenia
  - Other: Hepatitis, Acute renal failure, Nephrotoxicity

Topiramate

- **Mechanism:** Blocks voltage-dependent Na⁺ and Ca⁺⁺ Channels, also inhibits glutamate pathway, enhances effects of GABA
- **Uses:** Migraine, Headache, Neuropathic pain
- **Doses:** start 25 mg once a day, increase to 100 mg BID
- **Side Effects:** weight loss, cognitive dysfunction, somnolence, mood change, paresthesia, alopecia, contraindicated in pregnancy, decreases efficacy of OCPs
Divalproex

- Mechanism: not fully understood - Sodium Channel Blockade, increase GABA levels
- Uses: Migraine, Headache
- Dosing: Start 250 mg PO daily to BID, increase to 500 mg BID
- Side Effects: hepatotoxicity, SIADH, pancytopenia, hyponatremia, weight gain, somnolence, edema, mood change
- Other: Monitor LFTs, CBC, CMP

Antidepressants

- Tricyclic Antidepressants (TCAs)
  - Examples: nortriptyline, amitriptyline, desipramine
  - Mechanism: Inhibit reuptake of biogenic amines - NE and 5HT
  - Side Effects: QT prolongation, orthostatic hypotension, sedation, anticholinergic
  - My first choice when: sedation/sleep can be of benefit; cost concerns
  - Not my first choice: elderly, prolonged QT

- Selective Serotonin Norepinephrine Reuptake Inhibitors
  - Examples: Duloxetine, venlafaxine
  - Reduced side effects compared to TCAs
Cymbalta
- No antinociceptive (analgesic) properties in pre-clinical testing
- Reduced “worst” pain of CLBP by 2.5 points (0-10 scale) – compared to 1.8 in placebo
- Reduced pain interference with “general” activity, mood, social parameters but not walking
- Duration of benefit was maintained over 41 weeks (Skjaverski, 2010, Pain Med)

Low Dose Naltrexone
- Mechanism: likely entirely dependent of actions of opioid receptors, action on microglial cells, as an anti-inflammatory agent in the CNS
- Still highly experimental
- Where we are using it: neuropathic pain, fibromyalgia
References