

Cannabinoids and Health

Module 5

Lecture 4: Current Treatments for
Chronic Pain

Categories of Pain Treatment

- Behavioral Health Approaches
- Medication
- Medical intervention (aka “Interventional Pain Procedures”)
- Restorative Therapies
- Complementary and Integrative Health

From: HHS Pain Management Task Force draft report on “Pain Management Best Practices: Updates, Gaps, Inconsistencies, and Recommendations.

Behavioral Health Approaches

- Behavior Therapy
 - applying principles of operant conditioning to identify and reduce maladaptive pain behaviors (e.g., fear avoidance) and increase adaptive behaviors
- Cognitive Behavioral Therapy (CBT)
 - focuses on shifting cognitions and improving pain coping skills
- Acceptance and Commitment Therapy (ACT)
 - a form of CBT that emphasizes observing and accepting thoughts and feelings, living in the present, and behaving in a manner consistent with chosen values

Behavioral Health Approaches

- Mindfulness Based Stress Reduction
 - a mind-body treatment
 - focuses on improving awareness and acceptance of physical and psychological experiences through training in mindfulness meditation
 - mindfulness meditation teaches patients to self-regulate pain by developing nonjudgmental awareness and acceptance of sensations, emotions, and thoughts
- Biofeedback
 - monitoring and providing real-time feedback about physiologic functions associated with the pain experience (e.g., heart rate, muscle tension, skin conductance)
 - goal is to improve awareness and voluntary control over bodily reactions associated with pain exacerbations

Behavioral Health Approaches

- Emotional Awareness and Expression Therapy
 - an emotion-focused therapy for patients with a history of trauma or psychosocial difficulties
 - specifically for individuals suffering from centralized pain conditions
- Relaxation Training
 - altering attentional processes and heightening experience of physical and psychological relaxation
- Hypnotherapy
 - induces altered state of consciousness guided by a hypnotherapist
 - focuses patient's attention to alter experience of pain.
- Issues with Behavioral Interventions
 - Effectiveness varies (CBT most effective), cost, access, insurance coverage, time commitment make it difficult for many

Medication (side effects)

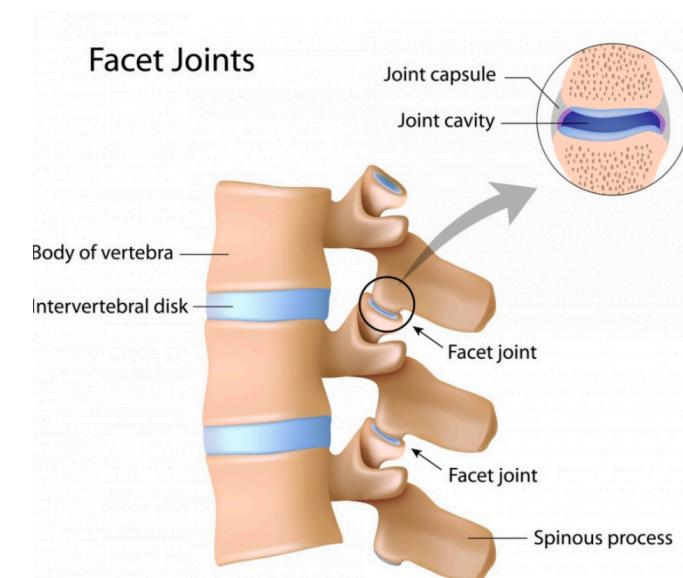
- Non-opioids
 - Acetaminophen (liver injury)
 - nonsteroidal anti-inflammatory drugs (NSAIDs) (GI bleed and ulcers)
 - antidepressants (e.g., serotonin-norepinephrine reuptake inhibitors and tricyclic antidepressants) – (TCA – cardiac symptoms, weight gain)
 - anticonvulsants like gabapentin, pregabalin (dizziness, drowsiness)
 - Muscle relaxants – flexiril, etc. (constipation, confusion)

Major Risks of Opioid Treatment

- Opioids
 - hydromorphone, hydrocodone, codeine, oxycodone, methadone, morphine (adverse effects, see below)
- Significant risk for addiction, even after short-term use
 - tolerance and withdrawal
- Overdose and death (respiratory depression)
- Pain sensitization
 - worsening of pain over time
 - increasing brain and body's responsiveness to pain
- Side effects
 - constipation, sedation, nausea, vomiting, irritability
- Drug diversion
- Dangerous interactions with other medications

Medical Interventions

- **Epidural steroid injections**
 - deliver anti-inflammatory medication directly into epidural space surrounding spinal cord
- **Facet joint nerve block and denervation injection**
 - local anesthesia with or without steroids is injected onto the medial branch nerves that supply joints in spine (facet joints)
- **Neuromodulation**
 - device-based electrical or magnetic stimulation activates central or peripheral nervous system tissue associated with pain pathways



Medical Interventions

- **Intrathecal Pain Pumps**
 - small doses of opioids in the spinal fluid can provide significant analgesia at much lower doses than oral opioids. Implanted intrathecal pumps in the spinal fluid can supply medication continuously
- **Vertebral augmentation**
 - stabilizes spine through the application of cement to vertebral compression fractures
- **Trigger points**
 - Using either dry needling or injections of local anesthesia, trigger points can be disrupted, resulting in relaxation and lengthening of muscle fiber, thereby providing pain relief
- **Stem Cell therapy**
 - May show promise for pain
 - More research needed

Restorative Therapies

- Physical therapy
- Transcutaneous electric nerve stimulation (TENS)
- Massage Therapy
- Occupational therapy
- Physiotherapy
- Cold and heat therapy
- Therapeutic ultrasound
- Bracing



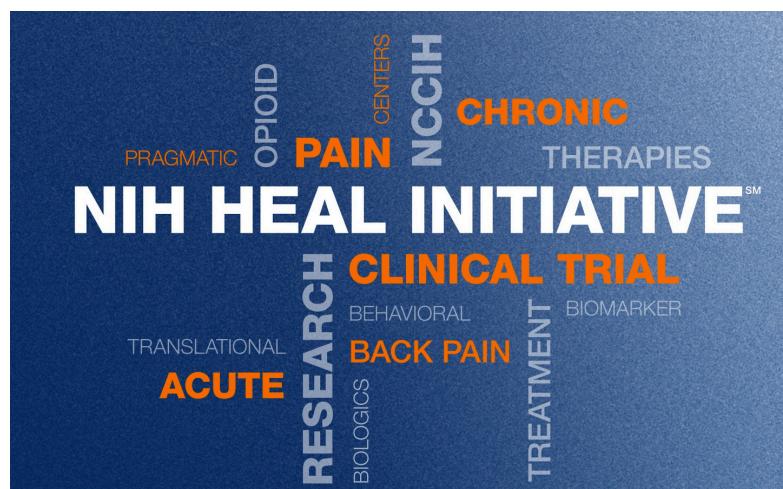
Complementary and Integrative Health



National Center for
Complementary and
Integrative Health

NIH...Turning Discovery Into Health

NIH National Center for Complementary and Integrative Health defines “complementary approaches” as those nonmainstream practices that are used *together with* traditional medicine, and defines “alternative approaches” as those used *in place of* conventional medicine



Complementary and Integrative Health

- Mind-body behavioral interventions
- Acupuncture
 - the insertion and manipulation of fine solid core needles at specified points or combination of points on the body
- Massage
- Chiropractic manipulation
- Osteopathic manipulation
 - focus on the joints, muscles, and spine
 - aims to improve circulatory and lymphatic systems

Complementary and Integrative Health

- Meditative movement therapies
 - yoga, tai chi
- Natural products
 - vitamins, dietary supplements, etc.
- Dietary changes & other lifestyle factors
 - anti-inflammatory diet
 - focus on micro-nutrients
 - sleep
 - physical exercise
 - stress management



Summary

- Different forms of chronic pain (e.g., neuropathic) may suggest different treatments
- None are particularly effective
- While opioids had reputation for effectiveness, it also is minimally effective
- Side effects for most, especially opioids, are bad
- Behavioral interventions may also be modestly effective with far fewer side effects
 - But other variables make behavioral interventions less desirable (access, cost, etc)
 - Same is true for some holistic alternatives