LECTURE OBJECTIVES

• Prevalence of chronic pain
• Perioperative management of Suboxone and other opioid antagonists
• Learn about appropriate Expectation Setting for the chronic pain patient
• Understand the importance of pre-operative opioid tapering
• Strategies for opioid tapering
• Discuss integrative approaches to chronic pain

Credit: NIH Pain Consortium
PREDICTORS OF POST-OP PAIN CONTROL

• Systematic review of risk factors for post-operative pain found the following to be positively correlated with increased post-op pain3:
  - Anxiety state (15/15 studies found positive correlation)
  - Age (6/12 found older age to be associated with less post-op pain, 1/12 found younger age to be predictive of less pain and 5/12 found no correlation)
  - Sex (4/8 studies found female sex to be positively correlated with post-op pain, 1/8 negative and 3/8 no correlation)
  - Depression (4/5 positive correlation)
  - Pre-op pain (4/8 positive, 1/8 negative, 3/8 no correlation)
  - History of chronic pain (2/2 positive)
  - Pre-op expectations of pain (2/2 positive)
  - Type of surgery (4/8 positive)


A BUPRENORPHINE REVIEW
PHARMACOLOGY

- Partial agonist at the mu receptor
- Antagonist at kappa and delta receptors
- Less potential for respiratory depression compared to classic opioids
- Broad interpatient variability pharmacokinetics
- Long half life due to depot effect
- Low doses of buprenorphine will competitively displace traditional opioids from the opioid receptor

BUPRENORPHINE FOR CHRONIC PAIN & OTHER INDICATIONS

- Both IV and transdermal formulations are approved for treatment for chronic pain by the FDA
- The oral and sublingual formulations are only approved by the FDA for opioid use disorder but are often used off label for treatment of chronic pain conditions
- Tolerance to both buprenorphine and methadone occur at a slower rate than morphine
- Buprenorphine may treat opioid induced hyperalgesia
- In a study of 15 middle-aged adults, low dose buprenorphine rapidly improved treatment-resistant depression

PATHWAY FOR ELECTIVE SURGERY
OTHER OPIOID ANTAGONISTS

• Low dose naltrexone\(^1,2\)
  - Becoming more widely used in patients with fibromyalgia, Crohn’s disease, MS, CRPS, neuropathic pain disorders
  - In addition to acting as mu- and delta-opioid receptor competitive antagonist, also acts as an antagonist at TLR4 receptors on macrophages such as microglia
  - Microglia are found in the CNS and produce inflammatory factors such as substance P, TNF\(\alpha\), IL6 and IL12 and excitatory AAs. When chronically active, the pro-inflammatory cascade may become neurotoxic
  - By inhibiting glial cell activation, LDN may act as a novel anti-inflammatory
  - Partial blockade of the opioid receptors may also increase the production of endogenous opioids

LOW DOSE NALTREXONE

- No formal recommendations for continuing or stopping LDN prior to elective surgery
- \(\frac{1}{2}\) life of 6 hours and \(\frac{1}{2}\) life of active metabolite (6-β-nalrexol) is 13 hours
- If LDN does increase endogenous opioids, may lose that benefit if stopped pre-op
- LDN does act as a competitive agonist of the opioid receptors, so patients may require slightly more opioid medication than a typical patient
- If patients are motivated and undergoing a known painful surgery, I generally recommend that they hold LDN 24 hours prior
GOAL FOR POST-OP PAIN CONTROL IN CHRONIC PAIN PATIENTS

- The goal is **not** a specific number (pain is not a vital sign!)
  - Need to discuss with patients before surgery that they **WILL** have some pain post-op and that this is ok and does not mean that something is wrong
- Goal: functional restoration that allows the patient to meaningfully participate in recovery activities
  - Deep breathing/use of IS
  - Active participation in PT/PT
  - Out of bed and walking

REACHING THE GOAL

- It is not just you – it is a team effort
- Invest time and effort prior to surgery
- Involve the surgical and peri-operative teams
  - Consider a referral to PAT
  - If a patient is taking chronic opioid medications, the surgeon and prescribing physician need to consider a pre-op taper and come up with a post-op plan
  - Patients need to be aware that if they are on high dose opioids before surgery, they will have greater difficulty with post operative pain management
CORNERSTONES OF PAIN EXPECTATION

• It is likely not possible to reduce a patient’s post-operative pain score below their baseline
• If surgery is done to improve a chronic pain condition, patients must be reminded that there will be an acute surgical pain component post-operatively
• The patient needs to know, prior to surgery, that discomfort is expected after the surgery
• Eliminating or limiting the preoperative opioid regimen is in the patient’s best interest
• Patients should be open to opioid adjuncts in the perioperative period such as procedures (regional anesthesia) or non-opioid adjuvants

EXPECTATION MANAGEMENT

• Recovery from surgery takes weeks to months; patients will likely experience pain during this recovery period. “It may take some time”.
• Patients need to own an active role in their recovery, working through expected pain, to maximize outcome
• Investing the time in expectation setting prior to surgery will pay off for provider and patient after surgery

OTHER THINGS TO CONSIDER

• Utilize multimodal analgesia
• Consider regional/neuraxial anesthesia if appropriate
• If chronic opioid therapy is maintained pre-op, expect that patients will have a higher than expected opioid requirement
• Consider respiratory monitoring for patients requiring significant doses of post-op opioid
• Avoid concurrent use of opioid medications and benzodiazepines
WHEN TO REFER

• To Pre-op clinic
  - Pt with history of chronic pain
  - Pt taking low-dose opioids (<50 MME/day)

• To Pain Physician
  - Pt taking high dose opioids for pain – ideally for opioid taper
  - Pt with history of poor surgical outcome/persistent pain after surgery
  - Pt with complex pain history/multiple pain complaints

• To Addiction Specialist
  - Pt with any history of addiction – including illicit drugs, ETOH and benzodiazepines
  - https://www.samhsa.gov

PERIOPERATIVE CARE OF THE CHRONIC PAIN PATIENT
PART 2: OPIOID TAPERING

WHAT IS CHRONIC PAIN?

CHRONIC PAIN
A constant pain that is usually present for more than 3 months and may be caused by various physical or psychological factors.

ACUTE PAIN
An acute pain occurs suddenly, lasts for a short time, and is usually caused by a specific injury or illness.

WEB MD
www.webmd.com/pain/

RMD
www.rmd.org/pain/

Pain Medicine
www.painmedicine.org/

9/6/18
THE MALADAPTATION OF CHRONIC PAIN

- Pain is not simple – it is a complex subjective physical and emotional experience
- Significant potential for amplification from the CNS
- Chronic pain often represents a maladaptive process
  - Independent of the concept of nociception
  - Central and peripheral sensitization
  - Changes at the amygdala, hippocamus, insula, cingulate & other areas

“...When pain becomes chronic, it no longer serves to protect us from harm and instead becomes a disease in its own right.”
Sean Mackey, MD, PhD, Stanford Pain Medicine

CHRONIC OPIOIDS IN THE CHRONIC PAIN PATIENT

- Chronic opioid use can increase pain – Opioid Induced Hyperalgesia
  - Reduced threshold for pain perception
- Chronic opioids can reinforce pathway of dysfunction

RATIONALE FOR OPIOID TAPER

- Peri-operative Opioids
  - Associated with increased post-operative hyperalgesia
  - Associated with worse post-operative function increase hospital LOS
  - Associated with increased risk of continued opioid use 12 months post-operatively
- Tapering does not increase pre-operative pain scores
SURGEON OPINION OF DELAY TIMING

- Acceptable timing of delay is < 6 months, preferably less than 2

PROVIDER SKILLS: DISCUSSING THE TAPER

- Rapport
- Listening
- Serving as an educator
- Providing re-assurance
- Explaining the plan and helping the patient feel less vulnerable
- Tapering is to achieve our goal
- Educate the patient about what to expect during tapering

SURGEONS OPINION OF DELAY

- Show support for delay of weaning
- Second only to tobacco use as a reason for delay
SETTING EXPECTATIONS

- Reasonable expectations
  - We are talking about pain management, not pain elimination
- The time element (might be worse before it is better)
- Setting the expectation of a new and different way to manage the pain which could include multiple options
  - Other medications
  - Procedures
  - Integrative approaches
  - Devices
  - Self-care by patient
- Selling the ideal of a sense of internal control on the part of the patient

HOW TO WEAN

- Determine the patient’s total daily dose
- Think about what medication you need to wean—long acting? short acting? Both?
- Taper the daily dose by 10% every 3-7 days.
  - This can be done every other day or even daily if the surgical date is sooner
- At the end increase to 20% every 3-7 days
- Use adjuncts to assist with symptoms of withdrawal

TREATING WITHDRAWAL

- Reassurance
- Slowing of the opioid wean
- Medications
  - Tizanidine
    - Centrally acting muscle relaxant
    - Binds to alpha 2 adrenergic receptors
    - 2-8 mg every 8 hours PRN
  - Clonidine
    - Alpha 2 agonist
    - 0.1 mg 4-6 times daily PRN
    - Some evidence to support use of SSRIs
INTEGRATIVE APPROACHES TO PAIN MANAGEMENT IN THE AREA OF MENTAL HEALTH

- Cognitive Behavioral Therapy
- Guided Imagery and Hypnosis and Mindfulness
- Lifestyle enhancement and balance
- Biofeedback and Use of Apps
- Nutrition and diet
- Exercise and movement
- Stress management
- Sleep enhancement
- Acupuncture, massage and chiropractic

LIFESTYLE

- Breath work:
  - 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 are often 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

AN EXAMPLE: BIOFEEDBACK AT MCW

- 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 measured by the Pain Catastrophizing Scale
REVIEW QUESTIONS

• Which of the following medications MUST be discontinued prior to an elective surgery:
  a. Butrans Patch
  b. Oxycontin
  c. Methadone
  d. Suboxone
  e. None of the above

REVIEW QUESTIONS

• Which of the following is NOT a predictor of difficult to control post-op pain?
  a. History of anxiety disorder
  b. Female sex
  c. Older age
  d. Presence of pain pre-op
  e. Chronic opioid use