

Acute Pain Management in Ambulatory Settings for Opioid-Naïve Adults: Non-Opioid Strategies and Appropriate Opioid Use

Hez Naylor, PhD, FNP-BC, AP-PMN
Assistant Professor, Creighton
University & Zion Pain Management



Objectives

- 1) Develop individualized acute pain management strategies for opioid-naive adults in ambulatory settings.
- 2) Explore effective non-opioid pain management options.
- 3) Identify criteria for appropriate opioid use for severe, short-term pain.
- 4) Discuss patient education techniques to manage expectations and improve outcomes.
- 5) Highlight the benefits of a multimodal approach to pain management.



A Common Case...

- A patient comes in with a sprained ankle and rates their pain as a 9/10. They're opioid-naïve, anxious about pain, and expect something strong.
- Question: How do we address this patient's pain while avoiding unnecessary opioid exposure and manage their expectations?
- What's our goal?

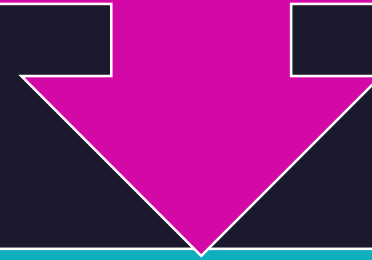
Understanding Acute Pain in Opioid-Naïve Adults

- Who is opioid-naïve? Most people!
- Most acute pain peaks at 1-3 days after injury and decreases within 7 days.
- Focus on multimodal pain management to minimize opioid exposure → What is multimodal pain management?
- Understand patient expectations and concerns about pain and medication.



Multimodal Pain Management

Multimodal analgesia combines two or more analgesic agents or techniques that act by different mechanisms to provide analgesia



American Society of Anesthesiologists (ASA) Task Force recommendations

Unless contraindicated, all patients should receive an around-the-clock regimen of a non-opioid agent

- Non-steroidal anti-inflammatory drugs (NSAIDs)
- Cyclooxygenase-2 specific drugs (COXIBs)
- Acetaminophen

Acute Pain: Quick Pathophysiology

- Tissue trauma, local and systemic inflammation, direct nerve injury
- Inflammatory mediators are released in the periphery

TRANSMISSION:

- Pain signal travels via primary afferent neurons (A-delta and C fibers) to dorsal root ganglion/dorsal horn of spinal cord, cross over and ascend spinothalamic tract to brain

PERCEPTION:

- Somatosensory cortex localizes and quantifies its intensity, limbic system has emotional response, prefrontal cortex interprets and gives it meaning.

MODULATION:

- Descending pathways can inhibit or amplify pain via neurotransmitters like serotonin, norepinephrine, endorphins, and GABA

Where Analgesics/Interventions Work

Transduction:

- Pharm interventions: Capsaicin, local anesthetics, opioids, NSAIDs, acetaminophen, anticonvulsants
- Non-Pharm Interventions: Touch therapy, cryotherapy, heat therapy

Transmission:

- Pharm interventions: Local anesthetics, NSAIDs, anticonvulsants, Opioids, A2 agonists, acetaminophen, NMDA antagonists
- Non-Pharm Interventions: TENS – transcutaneous electrical nerve stimulation, acupuncture, massage

Perception/Modulation:

- Pharm interventions: Opioids, antidepressants, A2 agonists
- Non-Pharm Interventions: Hypnosis, massage, acupuncture

Examples of Non-Opoids

Class	Action	Examples
Acetaminophen, NSAIDs	Varied mechanism, action on prostaglandin synthesis	Acetaminophen, celecoxib, ketorolac, ibuprofen
Alpha-2 agonists	Inhibition of NE release	clonidine, dexmedetomidine
Anticonvulsants	Decrease excitability of neurons by modulating sodium channels	Gabapentin, pregabalin
Antidepressants	Inhibition of NE and serotonin reuptake	Amitriptyline, duloxetine
Local anesthetics	Modulate sodium channels; interrupts nerve conduction	Bupivacaine, lidocaine, liposomal bupivacaine
NMDA-receptor antagonists	Dissociative anesthesia/analgesia ; reduce CNS excitability	Ketamine, dextromethorphan



Best Use of Non-Opioids for Acute Pain in Ambulatory Patients

Acetaminophen

- Administer PO on scheduled basis
- When given with opioids → superior analgesia and opioid-sparing effects and decrease in opioid adverse events like nausea/vomiting, sedation.
- When given with NSAIDs → additive analgesic effect
- Avoid in patients with hepatic insufficiency

Common dosing: 325 to 1000mg PO q4 to 6 hours with maximum dose of 4 grams/day (US Mfr dropped dose to 3g/day)

Non-steroidal Anti-inflammatory (NSAIDs)

- Administer PO on scheduled basis
- When given with opioids → superior analgesia and opioid-sparing effect, reduction in opioid adverse effects like postop nausea/vomiting, sedation
- May be associated with platelet and renal dysfunction, and GI irritation
- Contraindicated with renal dysfunction or ulcers



Common NSAIDs and Dosing

- Celecoxib 200mg PO q12 to 24 hours
- Ibuprofen 600mg PO q6 to 8 hours
- Naproxen 500mg PO q12 hours
- Meloxicam 15mg PO qDay



Anti-Convulsants/Gabapentinoids

- Gabapentin and pregabalin used for chronic neuropathic pain.
- Not a typical choice/recommended for acute pain except in special circumstances (known benefit for pain flare in a patient with fibromyalgia).
- Adverse effects include dizziness, sedation, peripheral edema
- Decrease dose in elderly, renal dysfunction; watch for synergistic sedation/respiratory depression with opioids

Gabapentinooids and Dosing

- Gabapentin 300mg PO q8 hours
- Pregabalin 75mg PO q12 hours



Antidepressants

- Not typical first-line monotherapy; may be useful for acute neuropathic pain conditions like sciatica, post-herpetic neuralgia, or acute musculoskeletal pain
- Delayed onset of relief, anticholinergic s/e with TCAs, duloxetine can raise BP
- Use caution in older adults and patients with cardiac risks.

EXAMPLES:

- Tricyclic antidepressants: Nortriptyline, or amitriptyline 10-25mg PO qhs
- SNRI: Duloxetine 30-60mg PO qDay for 1-2 weeks



Steroids

- Alternative to NSAIDs for acute inflammatory pain, low back pain, headache
- Do not combine with NSAIDs
- Avoid in uncontrolled diabetes, active infections, GI ulcers

EXAMPLES

- Methylprednisolone 6-day taper: 24mg divided on Day 1, 20mg divided on Day 2, 16mg divided on Day 3, etc.
- Prednisone 30-60mg PO qDay tapered over 5-7 days (varies on indication)

Muscle Relaxants

- Non-benzodiazepine skeletal muscle relaxants for acute pain related to spasm
- Watch for sedation; use for a few days up to four weeks, then taper to d/c

EXAMPLES:

- Cyclobenzaprine 5-10mg PO TID PRN spasm
- Methocarbamol 750-1500mg PO q6-8 hours (Max dose 4-4.5gm/day)
- Tizanidine 2-4mg PO q8-12 hours up to 24mg/day (4-8mg q8 PRN)

New Non-Opioid

- Suzetrigine: novel non-opioid, selective sodium channel blocker
- Approved by FDA in Jan 2025 for treatment of moderate-to-severe acute pain in adults – first new class of pain med in over two decades
- Targets peripheral nociceptive neurons that transmit pain signals
- Limited central nervous system effects/addiction due to no action on central opioid receptors
- In studies on abdominoplasty and bunionectomy surgeries, analgesic effect was comparable to that of hydrocodone-acetaminophen
- Common adverse effects: headache, constipation, nausea, dizziness

Topical Analgesics

- Topical lidocaine patches:
 - Analgesic efficacy mixed
 - Well-tolerated with low risk profile
 - May provide analgesia for some patients and should be considered
- Topical creams:
 - Menthol gel, Capsaicin cream, Diclofenac gel may benefit some with localized pain
 - Low risk due to low systemic absorption

Other Options: Non-Pharm Modalities

- Ice/Heat
- Physical Therapy
- Acupuncture
- Massage
- TENs unit
- Trigger point injections
- Support animals



Benefits of a Multimodal Approach

Reduced doses of analgesics in the treatment plan

Opioid dose-reducing effects

Better pain relief, secondary to synergistic or additive effects of the various agents in the treatment plan

Fewer “analgesic gaps”

Less pain during rest and activity

Improved functional outcomes

Improved patient satisfaction

Managing Acute Pain Without Opioids

Case Study: 25yo patient with acute ankle sprain pain who is opioid-naïve with no major medical problems. Asking for oxycodone.

First-line treatment is non-pharmacologic techniques, NSAIDs and acetaminophen:

- Ice, compression, and elevation recommended with limited weight-bearing activity
- Ibuprofen 600mg PO q6 hours & Acetaminophen 1gm PO q6 hours x 72 hours.

Education on how pain medications work to alleviate pain, side effects, and when to return if pain doesn't improve.

Managing Acute Pain Without Opioids

All acute pain management should include:

Nonpharmacologic techniques,
and acetaminophen and NSAIDs unless
contraindicated, rather than either drug alone.



Patient Education and Setting Expectations

- Explain that some discomfort is expected and manageable without opioids.
- Outline the benefits of non-opioid options and the risks of opioid use.
- Provide a clear, simple pain management plan that includes at-home care instructions.



When Are Opioids Appropriate ?

Severe pain that is not relieved by non-opioid options.

Short courses (typically 3 days or less) for conditions like fractures or severe injuries.

Lowest effective dose and shortest duration.

Benefits outweigh the risks!

Other drugs are contraindicated.



**When
considering
short courses
of opioids for
unmanaged
acute pain...**

Commonly prescribed opioids

- Oxycodone 5mg PO q4-6 hours PRN
- Hydrocodone/APAP 5/325 PO q4-6 hours PRN
- Morphine IR 15mg PO q4-6 hours PRN
- Tramadol 50-100mg q4-6 hours PRN (Max pts under 75 is 400mg/day; over 75 is 300mg/day)
- Patients, particularly elderly, may be okay with half a tablet (e.g., oxy 2.5mg, MSIR 7.5mg).

Amounts

- Oxycodone 5mg #12 pills for pain expected to last three days.
- Oxycodone 5mg #20 pills for pain expected to last five days.
- Oxycodone at higher dose if pain is severe and expected to last seven days (e.g. post op pain now being treated in outpatient setting).



Summary

The background of the slide is a photograph of several tall saguaro cacti in a desert environment. The cacti are green with distinct vertical ribs and are set against a clear, bright blue sky. Some cacti have multiple arms, while others are single-stemmed. The overall scene is a typical desert landscape.

- Use an individualized, multimodal approach. Non-opioid strategies are effective first-line options for most acute pain.
- Opioids may be appropriate for severe, short-term pain, when non-opioids are ineffective or contraindicated.
- Patient education and expectation management is essential for effective pain management in the ambulatory setting.

Thank you!



References

- Abrams, D. I., & Guzman, M. (2015). Cannabis in cancer care. *Clinical Pharmacology & Therapeutics*, 97(6), 575–586. <https://doi.org/10.1002/cpt.108>
- American Medical Association (AMA). (2019). Patient communication in acute pain settings. AMA Guidelines.
- American Society for Pain Management Nursing (ASPMN). (2021). Acute pain management best practices.
- Atalay, S., Jarocka-Karpowicz, I., & Skrzydlewska, E. (2020). Antioxidative and anti-inflammatory properties of cannabidiol. *Antioxidants*, 9(1), 21. <https://doi.org/10.3390/antiox9010021>
- Boehnke, K. F., Litinas, E., & Clauw, D. J. (2016). Medical cannabis use is associated with decreased opiate medication use in a retrospective cross-sectional survey of patients with chronic pain. *The Journal of Pain*, 17(6), 739–744. <https://doi.org/10.1016/j.jpain.2016.03.002>
- Centers for Disease Control and Prevention (CDC). (2016). Guidelines for prescribing opioids for chronic pain. Retrieved from https://www.cdc.gov/drugoverdose/pdf/guidelines_factsheet-a.pdf
- Centers for Disease Control and Prevention (CDC). (2022). Opioid overdose: Understanding the epidemic. Retrieved from <https://www.cdc.gov/drugoverdose/epidemic/index.html>
- Darmani, N. A., & Crim, J. L. (2007). Delta-9-tetrahydrocannabinol and synthetic cannabinoids prevent emesis produced by the selective 5-HT₃ receptor agonist 1-phenylbiguanide in the least shrew (*Cryptotis parva*). *Neuropsychopharmacology*, 32(12), 2729–2736. <https://doi.org/10.1038/sj.npp.1301386>
- Finn, D. P., & McNally, G. P. (2021). The endocannabinoid system in pain modulation: Implications for translational pain research. *Science Translational Medicine*, 13(584), eaba2366. <https://doi.org/10.1126/scitranslmed.aba2366>
- Franz, C. A., & Frishman, W. H. (2016). Marijuana use and cardiovascular disease. *Cardiology in Review*, 24(4), 158–162. <https://doi.org/10.1097/CRD.0000000000000103>
- Han, B., Compton, W. M., Blanco, C., & Jones, C. M. (2020). Trends in and correlates of medical cannabis use among adults in the United States. *Addiction*, 115(2), 247–254. <https://doi.org/10.1111/add.14869>
- Institute of Medicine. (2011). *Relieving pain in America: A blueprint for transforming prevention, care, education, and research*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/13172>
- Kosten, T. R., & George, T. P. (2002). The neurobiology of opioid dependence: Implications for treatment. *Science & Practice Perspectives*, 1(1), 13–20. <https://doi.org/10.1016/j.biopsycho.2011.03.028>
- Lucas, P., & Walsh, Z. (2017). Medical cannabis access, use, and substitution for prescription opioids and other substances: A survey of authorized medical cannabis patients. *International Journal of Drug Policy*, 42, 30–35. <https://doi.org/10.1016/j.drugpo.2017.01.011>
- McDonald, J., & Lambert, D. G. (2015). Opioid mechanisms and gastrointestinal side effects in clinical practice. *Pain Reports*, 0(2), e601. <https://doi.org/10.1016/j.pain.2020.12.017>
- Michigan Opioid Prescribing Engagement Network (OPEN). (n.d.). Acute care opioid prescribing recommendations. Retrieved from <https://michigan-open.org>
- National Academies of Sciences, Engineering, and Medicine. (2017). *The health effects of cannabis and cannabinoids: The current state of evidence and recommendations for research*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/24625>
- National Institute on Drug Abuse. (2021). Marijuana research report. Retrieved from <https://www.drugabuse.gov/publications/research-reports/marijuana>
- Pergolizzi, J. V., Jr., LeQuang, J. A., Berger, G. K., & Magnusson, P. (2018). The basic pharmacology of opioids informs the opioid discourse about misuse and abuse: A review. *Pain and Therapy*, 7(1), 1–16. <https://doi.org/10.1007/s40122-018-0108-7>
- Russo, E. B. (2016). Beyond cannabis: Plants and the endocannabinoid system. *Trends in Pharmacological Sciences*, 37(7), 594–605. <https://doi.org/10.1016/j.tips.2016.04.005>
- Volkow, N. D., Hampson, A. J., & Baler, R. D. (2017). Don't worry, be happy: The endocannabinoid system in normal and pathological brain aging. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 367(1601), 3326–3341. <https://doi.org/10.1098/rstb.2011.0380>
- Volkow, N. D., & McLellan, A. T. (2016). The risks of opioid treatment for pain. *JAMA*, 315(20), 2071–2072. <https://doi.org/10.1001/jama.2016.3444>
- Weiss, H. S., & Murrell, J. A. (2019). Opioid use and cardiac effects: Mechanisms and management considerations. *American Journal of Cardiovascular Drugs*, 20(4), 345–356. <https://doi.org/10.1007/s40256-019-00383-x>
- World Health Organization. (2020). Opioid overdose: Facts and figures. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/opioid-overdose>