Compass Opioid Stewardship in Practice Microlearning Series

COMPASS HEALTHCARE COLLABORATIVE
Sustainable Healthcare Transformation

Module 10: Transitioning from Hydrocodone to Buprenorphine

Welcome to Compass Opioid Stewardship in Practice. Each week, our Compass coaches will explore a real-world case, define a clinical goal, and walk through practical strategies to improve care. Whether you're tuning in via video, audio, or reading the summary, this session is built for busy clinicians like you.

This week's session is brought to you by Dr. Christine Blake Smith, DO; Clinical Coach in the Compass Opioid Stewardship Program.

Case Presentation

This week's case explores a 70-year-old patient with a remote history of heroin use disorder who had been stable for years on hydrocodone as part of a multimodal chronic pain treatment plan. After experiencing a sudden and severe worsening of pain, sleep disruption, and emotional distress, opioid-induced hyperalgesia became a suspected contributor. This case highlights the importance of trauma-informed care, careful reassessment of long-term opioid therapy, and the clinical decision-making involved in transitioning to buprenorphine while maintaining patient trust and safety.

Goal

Our clinical goal is to successfully transition a patient with uncontrolled pain (likely Opioid Induced Hyperalgesia) to a buprenorphine product from hydrocodone.

Achieving our Goal

- Conduct a comprehensive safety assessment confirming absence of suicidal or homicidal ideation and document findings
- Evaluate new onset of uncontrolled and widespread pain while assessing for acute medical causes
- Identify primary pain generator as osteoarthritis of the knee with additional concern for centralized pain symptoms
- Review and reinforce education regarding opioid-induced hyperalgesia as a potential contributor to symptom escalation
- Utilize shared decision-making to evaluate treatment pathways, including specialty referral and opioid rotation
- Initiate referral to orthopedic surgery for evaluation of structural pain source
- Confirm patient access to naloxone and provide overdose prevention counseling
- Establish emergency and support plan including 24-hour provider contact and ER utilization guidance
- Review buprenorphine formulation options and select buprenorphine/naloxone based on safety profile and history of opioid use disorder
- Develop outpatient induction plan including hydrocodone discontinuation and gradual buprenorphine titration
- Offer adjunctive medications for management of potential withdrawal symptoms
- Provide close clinical follow-up to monitor response, tolerability, and functional outcomes

Clinical Pearls

The clinical pearls we want you to remember are:
Transitioning from a full opioid agonist to a partial opioid agonist (buprenorphine) reduces the risk of opioid induced hyperalgesia, increases patient safety and reduces provider liability.

1. **Pharmacology of OIH**
   a. OIH is thought to result from chronic activation of NMDA receptors, pronociceptive pathways, and glial cell activation caused by long-term full agonist opioid use.
   b. It manifests as a paradoxical increase in pain sensitivity despite escalating opioid doses.
2. **Buprenorphine's Mechanism**
   a. Buprenorphine is a partial μ-opioid receptor agonist with very high receptor affinity and a ceiling effect on respiratory depression (making it a much safer option than an full opioid agonist like hydrocodone) and euphoria.
   b. It also has κ-antagonist activity, which may directly counteract some of the hyperalgesic mechanisms associated with long-term full opioid agonists.
   c. Evidence suggests it normalizes altered pain processing pathways and reduces central sensitization.
3. **Clinical Evidence**
   a. Studies and clinical experience show that patients transitioned from high-dose full agonists to buprenorphine often report improved pain control, less opioid tolerance, and reduced hyperalgesia.
   b. This benefit is especially observed in patients with high opioid doses who show paradoxical worsening pain.
   c. Guidelines (e.g., ASAM, VA/DoD) acknowledge buprenorphine as a viable option for patients with OIH.
4. **Practical Considerations**
   a. Transitioning requires careful induction to avoid precipitated withdrawal.
   b. Benefits: reduced OIH, lower risk of misuse, overdose, and tolerance escalation.
   c. Limits: may not fully relieve pain in patients previously stabilized on very high opioid doses, but the quality of analgesia is often improved.

Thank You

This education has been brought to you through the generous support of the Centers of Medicare and Medicaid Services. Thanks for reading this week's Compass Opioid Stewardship in Practice Microlearning Series. Thank you for being part of the Compass Opioid Stewardship Program. And thank you for all you do caring for your patients.

Resources Referenced in Podcast

1. **"Low-dose buprenorphine infusion to prevent postoperative hyperalgesia in patients undergoing major lung surgery and remifentanil infusion: a double-blind, randomized, active-controlled trial"**
   a. This publication on ScienceDirect showed that perioperative buprenorphine resulted in less secondary hyperalgesia than morphine (OIH model in surgical patients).
   b. Link:https://www.sciencedirect.com/science/article/pii/S0007091217538209
2. **"Evaluation of Buprenorphine Rotation in Patients Receiving Long-term Opioids for Chronic Pain: A Systematic Review"**
   a. This JAMA Network Open systematic review isn't exclusive to hyperalgesia, but pain intensity and harms associated with long-term opioid therapy are central to it. It suggests that buprenorphine rotation is associated with improved pain outcomes and fewer harms than continued full agonist use — supportive of the idea that switching to buprenorphine may mitigate some opioid-related pain sensitization effects.
   b. Link:https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2784021
3. **"Rapid quantification of pharmaceuticals and pesticides in passive samplers using ultra high performance liquid chromatography coupled to high resolution mass spectrometry"**
   a. This review from PMCID discusses OIH and notes that buprenorphine's partial agonist/ORL-1 pharmacology may confer less risk for OIH. It's a good high-level reference to support the pharmacological rationale.
   b. Link: https://pubmed.ncbi.nlm.nih.gov/22056241/