

Buprenorphine in Acute and Chronic Pain Management: An Effective and Safe Alternative to Opioid Escalation

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Introduction

Buprenorphine is an opioid with mixed agonist- antagonist activity at various opioid receptors, used clinically for chronic pain management, as well as opioid use disorder (OUD) treatment.¹ It acts as a partial agonist at the mu-opioid receptor and an antagonist at the kappa-opioid receptor.² These properties not only provide effective analgesia but also result in a ceiling effect on respiratory depression and euphoria, thereby reducing the risks of overdose and misuse.³ Additionally, buprenorphine is an effective option for managing acute pain and is a successful alternative to full- agonists of the mu-opioid receptor, in both opioid- tolerate and opioid-naïve patients.⁴

Methods

We present four cases of patients who experienced acute pain flares, for which buprenorphine was initiated as an alternative opioid therapy. Three patients were on chronic opioids, and the fourth was opioid-naïve but requiring high- dose opioids due to acute Guillain-Barré syndrome. Buprenorphine was used to effectively and safely manage these acute pain episodes, minimizing the need for dose escalation and/or increased frequency of short-acting, full mu-receptor agonists. This abstract does not contain identifiable patient information and is exempt from IRB review requirements according to UCLA institutional policy.

In each of the four cases:

Buprenorphine proved to be an effective and safe alternative for managing acute pain.

The goal in acute post-surgical or injury-related pain is to provide effective relief while minimizing systemic opioid risks. Buprenorphine’s ceiling effect distinguishes it from full-agonists, reducing respiratory depression risks. Of note, in certain clinical settings, buprenorphine has demonstrated equal or superior analgesic and anti-hyperalgesic effects compared to full mu-opioid agonists.⁵

Buprenorphine may offer intermediate-acting analgesia to stabilize fluctuations from short-acting opioids, and potentially eliminates the need for additional long- acting full-agonist opioids. Notably, in two cases, buprenorphine facilitated a complete transition off full- agonist opioids, providing a safer and more sustainable long-term opioid management strategy. These four cases demonstrate buprenorphine’s potential application in acute flare-up and chronic pain management.

Cases

Case 1: 54-year-old female with SLE, multiple surgeries, and chronic opioid use (Oxycodone 10 mg TID) presented with acute carpal tunnel and groin pain due to CVA-related hospitalization. Acute pain was treated with addition of Buprenorphine to her Oxycodone regimen. She is currently off Oxycodone and managed only on Buprenorphine 2 mg BID.

Case 2: 31-year-old male with chronic intestinal pseudo-obstruction, multiple exploratory- laparotomies, and chronic opioid use (Oxycodone 10 mg Q4hr) presented with rib fractures due to an MVA. Acute pain was treated with addition of Buprenorphine to his Oxycodone regimen. He is now on Buprenorphine 2mg QHS as a substitute for long-acting full-agonists in addition to his chronic opioid regimen.

Case 3: 59-year-old female with chronic pelvic pain and opioid use (Hydrocodone 10 mg Q4hr) presented with acute musculoskeletal pain following a stroke and hospitalization. Acute pain was treated with addition of Buprenorphine 2mg BID instead of short-acting, full-agonist opioid (Hydrocodone) escalation.

Case 4: 39-year-old opioid-naïve male developed severe extremity pain due to an acute Guillain-Barre syndrome flare. He was switched from escalating full-agonist doses to Buprenorphine 2 mg TID and tapered off Oxycodone.