Buprenorphine Cross-Tapering using a Micro-dosing Strategy

Background: Buprenorphine is a mu opioid receptor partial agonist that is indicated for pain management and the treatment of opioid use disorder (OUD). Traditional induction for patients with OUD requires a patient to experience opioid withdrawal (measured via COWS scores) prior to buprenorphine initiation. This is necessary in order to prevent the experience of precipitated withdrawal due to the partial agonist effects in the setting of a full opioid agonist when using high doses of buprenorphine (mg doses). Micro-dosing of buprenorphine uses the buprenorphine buccal films (Belbuca®), which are dosed in micrograms, allowing for the induction of buprenorphine without the need to first experience withdrawal or the risk of precipitated withdrawal given the very small doses. Doses are increased over 3-4 days to achieve full maintenance dosing. Case reports and case series support this approach in hospital settings, and we have successfully completed buprenorphine induction using this approach in two patients at HUP.

Intent: For use as an alternative to standard or higher-dose buprenorphine induction strategies

Intended Patient Population

1. Patients requesting buprenorphine treatment for OUD who have had a history of illicit opioid use (fentanyl)- UDS confirmation not necessary

   AND

   Who wish to avoid the need for moderate withdrawal symptoms prior to induction with higher doses of buprenorphine.
   - For example:
     - Patients wishing to transition from methadone to buprenorphine
     - Patients with chronic, heavy use of IV or intranasal fentanyl
     - Patients who have experienced prior precipitated withdrawal

2. On full opioid agonist for treatment of pain but also with OUD, as means to initiate buprenorphine for treatment of OUD while cross tapering full agonist therapy for pain control.
   - For example:
     - Patients admitted with acute pain and concomitant OUD, requiring full agonist therapy for analgesia but wishing to initiate buprenorphine
     - Patients on chronic opioid for analgesia and diagnosed with OUD who would like to be transitioned to buprenorphine for MOUD

Procedure:

Microdosing regimen using Belbuca® and Suboxone® (Buprenorphine/naloxone):

Day 1 - 150 mcg buccal film q6h

Day 2 - 450 mcg buccal film q6h (Start here for patient not requiring a cross-taper of full agonist)

Day 3 – Buprenorphine/naloxone 2 mg SL q6h

Day 4 – Buprenorphine/naloxone 4 mg SL q6-8h*

- *If patient is also experiencing acute pain requiring full opioid agonists– consider maintaining q8h dosing for the anticipated duration of acute pain.
- If patient is not also experiencing acute pain requiring full opioid agonists, go straight to 4 mg q6h on Day 4.
- Consolidate total daily dose into once daily dosing as Suboxone® (Buprenorphine/naloxone) once on a stable dose post-titration and prior to discharge.

ALTERNATIVE using IV Buprenorphine (for patients who cannot tolerate or take anything in the oral cavity):

Day 1 – Buprenorphine 150 mcg IV q6h
Day 2 – Buprenorphine 300 mcg IV q6h (Start here for patient not requiring a cross-taper of full agonist)
Day 3 – Buprenorphine/naloxone 2 mg SL q6h
Day 4 – Buprenorphine/naloxone 4 mg SL q6-8h*
*If patient is also experiencing acute pain requiring full opioid agonists– consider q8h dosing. If patient is not also experiencing acute pain requiring full opioid agonists, go straight to 4 mg q6h. Consolidate total daily dose into once daily dosing as Suboxone® (Buprenorphine/naloxone) once on a stable dose post-titration and prior to discharge.

Clinical Opioid Withdrawal Scale COWS Monitoring

COWS should be documented throughout the induction process to monitor for precipitated withdrawal. Nursing should document a COWS score at least every 12 hours (e.g. with every other buprenorphine administration) and as needed based on developing/worsening withdrawal symptoms (i.e. nausea/diarrhea, irritability). If COWS scores begin to elevate, go back to previous dosing scheme and consider a psychiatry consult.

Opioid cross-taper for patients with OUD and acute/chronic pain:

Chronic opioids: On day 1 of buprenorphine microdosing, decrease full agonist dose by 30-50% and then 25% every 2-3 days thereafter or as indicated based on expected acute on chronic pain trajectory.

- For example:
    - Baseline regimen Oxycodone ER 40 mg PO q12h and oxycodone 10 mg PO q6h (total daily oxycodone = 120 mg = oral morphine equivalent (OME) 180 mg) → (Day 1) Decrease 50% to Oxycodone 20 mg PO q12h x 2 days and oxycodone 5 mg PO q6h x 2 days; then Oxycodone 10 mg PO q12h and oxycodone 10 mg PO q8h x 2 days; then discontinue Oxycodone ER and decrease to oxycodone 10 mg PO q12 h x 2 days, the stop all oxycodone.

For transition from methadone: Stop methadone on Day 1 of buprenorphine microdosing regimen and follow buprenorphine titration protocol above

Acute pain: Continue to provide PRN full agonist opioid analgesic. Can provide more rapid full agonist taper (over 3-5 days) as acute pain resolves.

- For example: Baseline regimen: Oxycodone 10 mg PO q4h → Decrease 30% (Day 1) oxycodone 10 mg PO q6 x 2 days; then oxycodone 10 mg PO q12h x 2 days; then oxycodone 5 mg PO q12h x 2 days, then stop if full agonist is no longer needed.

Discharge Considerations:

- Ensure early discharge planning to ensure follow-up for OUD care and buprenorphine prescribing
- Provide Narcan on discharge – preferably filled and given to patient prior to leaving

Approximate Buprenorphine Equivalencies:

Buprenorphine 1 mg IV ≈ Suboxone® (Buprenorphine/naloxone sublingual film/tablet) 4 mg ≈ 1800 mcg Belbuca® (Buprenorphine buccal film)

References

Antoine D, Huhn AS, Strain EC, Turner G, Jardot J, et al. Method for successfully inducting individuals who use illicit fentanyl onto buprenorphine/naloxone. Am J Addict. 2020, 00:00-00.

Brar R, Fairbairn N, Sutherland C, Nolan S. Use of a novel prescribing approach for the treatment of opioid use disorder: Buprenorphine/naloxone micro-dosing – a case series. Drug Alcohol Rev 2020;39:588-594.

Klaire S, Zivanovic R, Barbic SP, Sandhu R, Mathew N, Asar P. Rapid micro-induction of buprenohprhine/naloxone for opioid use disorder in an inpatient setting: A case series. Am J Addict 2019;28:262-265.

Rozylo J, Mitchell K, Nikoo M, Durante SE, Barbic SP, et al. Case report: Successful induction of buprenorphine/naloxone using microdosing schedule and assertive outreach. Addict Sci Clin Pract. 2020;15:2: https://doi.org/10.1186/s13722-020-0177-x.

Weimer MB, Guerra M, Morrow G, Adams K. Hospital-based Buprenorphine Micro-dose Initiation. J Addict Med. 2020; 00:00-00: 10.1097/ADM.0000000000000745.