Handout for PBLD Set 1: Patients on Chronic Methadone, Buprenorphine or Naltrexone in the ASC Setting

Friday May 3, 2024

2:45 PM – 3:35 PM

Figure 1 - DSM-V Diagnostic Criteria for OUD

Impaired control:

1. Opioids are often taken in larger amounts or over a longer period than was intended.
2. There is a persistent desire or unsuccessful efforts to cut down or control opioid use.
3. A great deal of time is spent in activities necessary to obtain the opioid, use the opioid, or recover from its effects.
4. Craving, or a strong desire or urge to use opioids.

Social impairment:

5. Recurrent opioid use resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued opioid use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of opioids.
7. Important social, occupational, or recreational activities are given up or reduced because of opioid use.

Risky use:

8. Recurrent opioid use in situations in which it is physically hazardous.
9. Continued opioid use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.

Pharmacological criteria:

10. Exhibits symptoms of tolerance (reducing effect with increasing dose).*
11. Exhibits symptoms of withdrawal (physiological symptoms due to absence of a substance typically used repeatedly).*

*10 and 11 do not apply to individuals taking chronic opioids under medical supervision.

Kohan L, Potru S, Barreveld AM, Sprintz M, Lane O, Aryal A, Emerick T, Dopp A, Chhay S, Viscusi E. Buprenorphine management in the perioperative period: educational review and recommendations from a multisociety expert panel. Reg Anesth Pain Med. 2021 Oct;46(10):840-859

Table 1 – Medications for Opioid Use Disorder and their Mechanism of Action			
	Methadone	**Buprenorphine**	**Naltrexone**
Main Receptor Effects	• Synthetic full mu agonist • Weak NMDA antagonist	• High affinity partial mu agonist • Partial kappa antagonist	• Competitive antagonist at opioid receptors

Table 2 – FDA-Approved Buprenorphine Formulations for OUD and Pain Management	
OUD (milligram formulations)	**Analgesia (microgram formulations)**

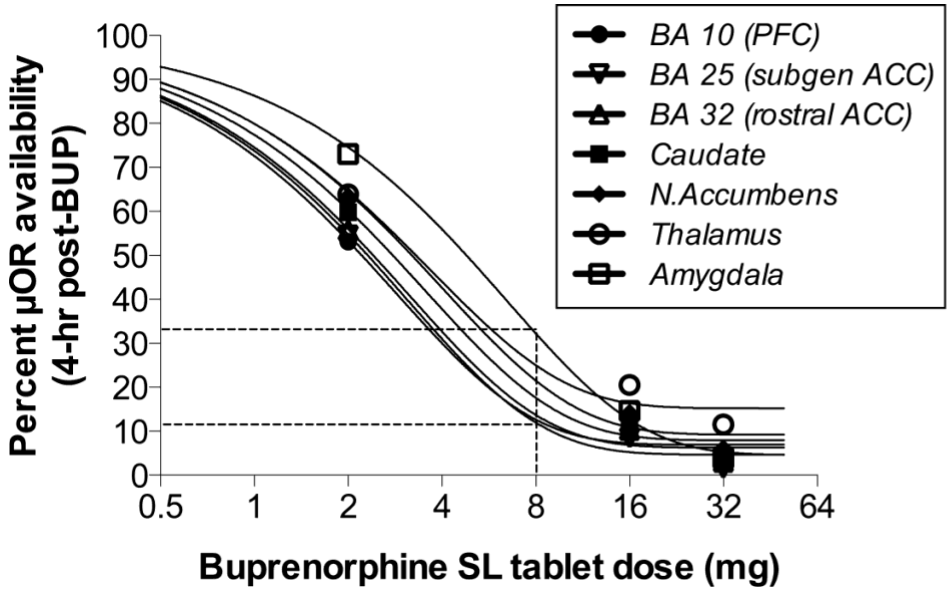
• Buprenorphine + Naloxone:
  • Sublingual tablets (Zubsolv)
  • Sublingual film (Suboxone)
  • Buccal film (Bunavail)
• Buprenorphine:
  • Sublingual tablets
  • Extended release subcutaneous injection (Sublocade, Brixadi)
	• Transdermal patch (Butrans)
	• Buccal film (Belbuca)
	• Immediate release injection (Buprenex)

Adapted from: Kohan L, Potru S, Barreveld AM, Sprintz M, Lane O, Aryal A, Emerick T, Dopp A, Chhay S, Viscusi E. Buprenorphine management in the perioperative period: educational review and recommendations from a multisociety expert panel. Reg Anesth Pain Med. 2021 Oct;46(10):840-859.

Table 3– Mu Opioid Receptor Availability with Escalating doses of Buprenorphine	
Buprenorphine Dose (mg)	**Mu Opioid Receptor Availability (%)**
1	71-85
2	53-72
4	36-55
8	11-22
12	13-14
16	9-20
24	4-15
32	2-12

Quaye AN, Zhang Y. Perioperative Management of Buprenorphine: Solving the Conundrum. Pain Med. 2019 Jul 1;20(7):1395-1408.
Greenwald M, Johanson CE, Bueller J, et al. Buprenorphine duration of action: Mu-opioid recep- tor availability and pharmacokinetic and behavioral indices. Biol Psychiatry 2007;61(1):101–10.
Greenwald MK, Comer SD, Fiellin DA. Buprenorphine maintenance and mu-opioid receptor availability in the treatment of opioid use disorder: Implications for clinical use and policy. Drug Alcohol Depend 2014;144:1–11.

Figure 2 – Non-Linear Regression Curves on Mu Opioid Receptor Availability



Greenwald MK, Comer SD, Fiellin DA. Buprenorphine maintenance and mu-opioid receptor availability in the treatment of opioid use disorder: implications for clinical use and policy. Drug Alcohol Depend. 2014 Nov 1;144:1-11.

Table 4 – Common Non-Opioid Multi-Modal Adjuncts		
Medication	**Benefits**	**Considerations**
Acetaminophen	Non-sedating, synergistic	Dose ceiling, relatively weak analgesic
NSAIDs	Non-sedating, synergistic	Dose ceiling, many contraindications and surgeon preference issues
Gabapentinoids	Synergistic	Sedating, questionable benefit
Ketamine	Potent, non-opioid analgesic, no respiratory depression, no dose ceiling	Potential for dysphoric effects
Lidocaine (IV)	Local anesthetic and anti-inflammatory	Sedating, potential for LAST
Magnesium	Non-opioid analgesic (NMDA effects)	Sedating, potentiate NMBDs
Alpha-2 Agonists	Analgesia, anxiolysis	Sedating, hypotension
Dexamethasone	Anti-inflammatory/analgesic, anti-emetic	Concern in diabetics?, has NOT been shown to increase risk of SSI