Buprenorphine: The Basics and Beyond

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27 April, 2024

Disclosures/Conflicts of Interest

- I have no financial disclosure or conflict of interest with the materials in this presentation

A Brief Introduction

PharmD from Ohio Northern University

Community/Ambulatory Care PGY1 at West Virginia University

- Family medicine, psychiatry

Pain Management & Palliative Care PGY2 at Summa Health

- Acute/chronic pain, hospice, addiction medicine

Objectives

- Review the pharmacology of buprenorphine (BUP)
- Differentiate between pain management and opioid use disorder (OUD) dosing
- Discuss strategies and challenges of initiating buprenorphine

Presentation-specific Definitions

- Applied pharmacology
  - A practical approach to drugs and drug delivery
  - Use the science to treat the person
- Clinical controversy
  - Subject of debate depending on practice style and training
- Oral Morphine Equivalent (OME)

Increasing Presence of BUP

Psychiatry/Addiction Medicine

Pain Management

Primary Care

BUP Mechanism of Action

- Semisynthetic opioid
- Partial mu opioid agonist
- Kappa opioid receptor >> delta opioid receptor antagonist

Lexicomp. 2024.

BUP Pharmacology

Half life

- 24 – 42 hours

Duration of action

- OUD: 24 hours
- Pain: 6 - 8 hours

Very strong affinity for opioid receptors

- 1.7x greater affinity than hydromorphone, 6.2x fentanyl, 120x oxycodone

Lexicomp. 2024.
Volpe DA et al. 2011.

BUP Adverse Effects

Constipation	Nausea	Altered Mentation
Itching*	Sedation	QTc Prolongation

Lexicomp. 2024.

BUP Products - OUD

Formulation	Selected Available Strengths
Sublingual films + naloxone	2/0.5, 4/1, 8/2, 12/3 mg
Sublingual tablets +/- naloxone	Zubsolv to Suboxone Dose Equivalents 1.4/0.36 mg = 2/0.5 mg Suboxone 2.9/0.71 mg =4/1 mg Suboxone 5.7/1.4mg = 8/2 mg Suboxone 8.6/2.1 mg = 12/3 mg Suboxone 11.4/2.9 mg = 16/4 mg Suboxone
Long acting injection	300mg/1.5mL,100mg/0.5 mL

Lexicomp. 2024.

BUP Products - Pain

Formulation	Selected Available Strengths
Transdermal patch	5, 7.5, 10, 15, 20 mcg/hr
Buccal film	75, 150, 300, 450, 600, 750, 900 mcg
Injectable solution	0.3 mg/1 mL*

Lexicomp. 2024.

BUP Conversions

Product	Equipotent Other
200 mcg SL BUP	100 mcg IV/IM/SC BUP
1 mg SL BUP	80 OME
300 mcg IV BUP	10 mg IV morphine
1 mg TD BUP	100 OME

Foster et al. 2013

Induction Strategies - Traditional

- Discontinue full agonist opioids, prescribed or illicit
- Wait for mild withdrawal
  - COWS > 12
- Initiate buprenorphine

Induction Strategy - Microdosing

- Continue full agonist(s)
- Initiate low dose buprenorphine
- Several strategies documented
  - Ahmed et al have a literature review of microinduction
- None are technically the standard of care

Bernese Method

- 2 case reports from Hammig et al
- Case 1 microinduction schedule seen here
- More tolerable induction experience was described

Day	BUP (SL)	Heroin (IN)
1	0.2 mg	2.5 g
2	0.2 mg	2 g
3	0.8+2 mg	0.5 g
4	2+2.5 mg	1.5 g
5	2.5 mg BID	0.5 g
6	2.5+4 mg	0
7	4 mg BID	0
8	4 mg BID	0
9	8+4 mg	0

Patient Case 1

68 yo F with lymphoma with chronic pain from interstitial cystitis & joint pains from immunotherapy & caught diverting the medications

- Morphine ER and oxycodone IR
- MED 300

The decision is made to initiate BUP. What dosing strategy should be employed?

BUP Candidates

- (Opioid-induced) hyperalgesia
- Increasing risk and diminishing benefit of escalating full agonist opioids
- Concern for opioid abuse, diversion, or overdose
- Any opioid-sensitive pain*

Induction Strategy Considerations

- Setting
  - Home vs hospital
- Timeframe
  - Urgent switch needed?
  - Patient comfort?
- Product(s) availability
- Patient/caregiver savvy

Patient Case 1 – Patient-specific Considerations

- Withdrawal
- Ceiling effect(?)
- Dedicated caregiver(s) to help manage medications and monitor

Patient Case 1 – Induction Strategy

Week	BUP-naloxone	Full Agonists
1	0.5-0.125 mg TID	Continue current dose
2	1-0.25 mg TID	Reduce by 30%
3	2-0.5 mg AM 1-0.25 mg noon and PM	Reduce by 30%
4	2-0.5 mg TID	Continue oxycodone IR PRN breakthrough

Patient Case 2

- 55 yo M with metastatic prostate cancer to the bone & h/o OUD on BUP 4 mg TID, comes in with worsening cancer pain from progression in bones - pain is poorly controlled. Acute pain consult to optimize pain regimen.
- How should BUP be optimized?

Patient Case 2 Food for Thought

- Prognosis? Goals of care?
- Can increase buprenorphine for pain management purposes (24 mg max)
- Non-opioid adjuvants – bony mets
- PRN opioids

Patient Case 3

- 85 yo frail F with cancer pain from met breast cancer to bone – very sensitive to any opiates.
- Should we try BUP?

Patient Case 3 Food for Thought

- Prognosis?
- Opioid solutions (oxycodone and morphine are most commonly available)
- If even small doses are sedating(eg oxy 2.5 mg), BUP may be an option
- Adjuvants?
- Low dose methadone?
- Frailty = poor candidate for patch option

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