

Buprenorphine Analgesia. Better than Morphine?

From The Hunterian Laboratory Department of Neurosurgery, Johns Hopkins Medical Institutions, Baltimore MD USA

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I. The Morphine Opioid Problem



People with an opioid use disorder in 2019*



People with extra-medical use in 2019*



Percentage of people who developed opioid use disorder following extra-medical opioid use**



Percentage of opioid pills prescribed post-surgery that went unused***

*hhs.gov/opioids, **NIH, https://www.drugabuse.gov, ***Bicket, JAMA, 2019

2. Clinical Burden of Opioid Prescribing



Regulatory paperwork to prescribe take-home opioids to patients



Prescribing pain medication for outpatient use is risky and not a billable service



Patient requests for more opioid medication are uncomfortable and time consuming



Managing patient pain has become an ethical dilemma

3. Solution: Long-Acting Injectable Implants

An injectable sustained-release buprenorphine product delivered in the clinic

2 – 3 days of safe and effective pain relief

Balancing powerful pain management with responsible prescribing

Eliminates extramedical use, reduces diversion, overdose, and accidental pediatric exposure



5. Hunterian Neutral Lipid Carrier System

Controlled release

Longer stability

• High Drug Loading

Biocompatible/Biodegradable

No toxicity

• Ease of scalability

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4. Competitive Analysis

Value	Long-Acting Buprenorphine	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Codeine	Tramadol	Ibuprofen	Acetaminophen
Analgesic Potency*									
Risk Mitigation									
Safety Profile									
Revenue Generating									
Duration/ Dose	(48 – 72 hrs)	(3 - 4 hrs)	(4 - 6 hrs)	(3 - 6 hrs)	(3 - 4 hrs)	(4 - 6 hrs)	(6 hrs)	(4 - 6 hrs)	(4 - 6 hrs)
*Based on oral morphine equivalents = Good = Average = Poor									

6. Buprenorphine

A 40-year history of safety with only one morbidity associated with the singular use of buprenorphine







Lipid Carrier Layer

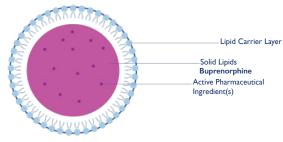
Solid Lipids

Active Pharmaceutical Ingredient(s)

Has 30 x greater analgesic potency than morphine

Has a better safety profile than other analgesics including acetaminophen and NSAIDS

Hunterian Neutral Lipid Carrier + Buprenorphine = PBD-2021



Is less reinforcing than other prescription opioids such as oxycodone

7. Conclusions

- 1. Buprenorphine is a safe, effective alternative to morphine analgesia.
- 2. Long-Acting buprenorphine implants reduce the burden of opiate prescribing.