



Buprenorphine to Methadone Conversion For Acute Pain Management in a Patient with Substance Use Disorder

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I. Introduction

- Acute pain management is challenging, especially with rising trends in substance use disorders.
- Lack of addiction medicine specialists often leaves pain management physicians responsible for managing untreated substance use disorders.
- A recent NIH study found that 74% of physicians reported insufficient skill, and 72% reported inadequate knowledge in managing addiction.
- This case focuses on the pharmacological conversion to Methadone for a patient with recent high-dose Fentanyl and Suboxone use, and examines the correlation between Fentanyl dosage and Methadone recommendations.

II. Case Description

- Patient: 28-year-old male with daily 1g Fentanyl use, recent Suboxone use (2 mg QID), and legal constraints on his medical record.
- Presented with uncontrolled pain after facial wound exploration surgery.
- Initial pain management:
 - PCA Hydromorphone (137 mg over 7 days)
 - Gabapentin, Cyclobenzaprine, Ketorolac, and Ketamine infusion.
- Patient refused to restart Suboxone, agreed to Methadone initiation.

III. Results

- Despite multimodal analgesia, pain persisted (8-10/10).
- Ketamine provided the most relief.
- Methadone was started at 5 mg-5 mg-10 mg, titrated up to 10 mg TID, then to 15 mg TID, higher than the standard dose (2.5 mg).
- Pain scores reduced significantly from 10/10 to 1-2/10.
- Discharged on Methadone, Morphine liquid solution, Tylenol, Gabapentin, and Cyclobenzaprine.

PCA Hydromorphone								
Action	Rate...	Rate...	New ...	Rate...	Rate...	New ...	Rate...	
Loading Dose (mg)	*0 mg+							
Demand Dose	0.4 mg+	0.5 mg+	0.5 mg+	0.5 mg+	0.5 mg+	0.5 mg+	0.5 mg+	0.5 mg+
Lockout Interval	15 M...	10 M...	10 M...	10 M...	10 M...	10 M...	10 M...	10 M...
Basal Rate	0 mg...	0 mg...	0 mg...	0 mg...	0 mg...	0 mg...	0 mg...	0 mg...
Handoff Volume (ml)	46.4+	43.2+	21.3+	21.3+	19+			16+
Number of Attempts	1+	5+	641+	21+	32+	60+		9+
Doses Given (Inj)	1+	46+	8+	6+	1+	4+		4+
Total 4 Hr. Dose (mg)	3.2+	2.5+	4.1+	3.2+	0.5+	2+		4.3+
Total 24 Hr. Dose (mg)	7.8+	19.7+	32.7+	18.3+	15.5+	11.5+		31.5+

Figure: Amount of Patient Controlled Analgesia Hydromorphone used per day for the duration of the patient’s hospitalization

IV. Discussion

- Methadone’s analgesic duration (6-8 hours) contrasts with its anti-craving effects (>24 hours).
- Higher initial Methadone doses (10 mg TID) may be effective for managing acute pain in patients with high-dose Fentanyl and Suboxone use.
- Further research is needed to develop guidelines for Methadone dosing in this specific patient population.

V. Conclusion

- Complex pain management in patients with substance use disorders requires specialized knowledge and skills
- Higher Methadone doses may provide effective acute pain relief in opioid-tolerant patients.
- Multimodal pain management and individualized dosing are key.
- More research is required to establish best practices for Methadone use in complex substance use disorder cases.