Buprenorphine Microinduction: A New Tool for Consultation-Liaison Psychiatrists

Ariel Claman, MD, Serena Arnouk, PharmD, Mark Abroms, DO, S. Alex Sidelnik, MD

Addiction Psychiatry Consultation-Liaison Service
NYU Langone Health

INTRODUCTION

Buprenorphine is a partial mu-opioid receptor agonist effective at reducing all-cause and overdose mortality in patients with opioid use disorder (OUD). Standard buprenorphine induction can be challenging and traditionally requires cessation of opioids, often leading to moderate to severe withdrawal symptoms before starting treatment. This can be a barrier for hospitalized patients who may have co-occurring pain or cannot tolerate withdrawal while receiving medical treatment. Buprenorphine microinduction (aka low-dose initiation, microdosing, or "The Bernese Method") is a novel and clinically useful strategy in which very low doses of buprenorphine are titrated concurrently with full opioid agonists, allowing for initiation of buprenorphine without a period of opioid withdrawal [1] [2].

In 2021, NYU Langone Health adopted an inpatient buprenorphine microinduction protocol developed by Addiction Psychiatry and Clinical Pharmacy. In order to highlight its application in the hospital setting, we describe a series of patients on our Addiction Consultation-Liaison (C-L) Service who were successfully transitioned to buprenorphine using microinduction.

General Approach to Microinduction

Start very low dose buprenorphine while maintaining full agonist opioid

↓

Increase buprenorphine dose gradually and monitor for withdrawal symptoms

↓

Reach therapeutic buprenorphine dose

↓

Stop full agonist opioid

Method

The microinduction protocol utilizes buprenorphine buccal films (Belbuca®) with doses increased in a step-wise manner over several days prior to transitioning to buprenorphine-naloxone (Suboxone®). The protocol is most appropriate for patients with an expected length of stay of at least 48-72 hours. Short and long titration schedules were created taking into consideration anticipated length of stay and milligram morphine equivalence.

Short Schedule Microindution

MICROINDUCTION, Short Schedule

Step	Buprenorphine buccal film (Belbuca@)	Duration	Buprenorphine-naloxone sublingual film (Suboxone@)	Duration	Equivalent total daily dose of buprenorphine*	Full opioid agonist
1	150 mcg q6h	4 Doses			2.64 mg	Full dose
2	300 mcg q6h	4 Doses			5.28 mg	Full dose
3			2-0.5 mg q6h	4 Doses	8mg	Full dose
4			8-2 mg daily		8 mg	Stop
5	Consider further uptitration of dose to suppress opioid cravings and withdrawal.					

*Dose equivalency calculations suggest that 150 mcg buccal buprenorphine is equivalent to approximately 0.33 mg SL buprenorphine.

Long Schedule Microinduction

MICROINDUCTION, Long Schedule

Day	Buprenorphine buccal film (Belbuca@)	Buprenorphine-naloxone sublingual film (Suboxone@)	Equivalent total daily dose of buprenorphine*	Full opioid agonist
1	150 mcg daily		0.33 mg	Full dose
2	150 mcg BID		0.66 mg	Full dose
3	150 mcg TID		1 mg	Full dose
4		2-0.5 mg daily	2 mg	Full dose
5		2-0.5 mg BID	4 mg	Full dose
6		4-1 mg BID	8 mg	Stop
7	Switch to total daily buprenorphine-naloxone dose administered once daily (ie., 8-2 mg or 12-3 mg daily). Consider further uptitration of dose to suppress opioid cravings and withdrawal.			

*Dose equivaleny calculations suggest that 150 mcg buccal buprenorphine is equivalent to approximately 0.33 mg SL buprenorphine.

CASES

Case 1: A 77-year-old woman with a history of opioid misuse, anxiety and chronic back pain was admitted with a thoracic compression fracture and seen for suicidal ideation in the context of pain and opioid withdrawal. A short schedule microinduction was administered, together with a full agonist opioid, resolving her pain and suicidal ideation. The full agonist was discontinued and she was discharged on buprenorphine-naloxone 8-2mg daily with follow up.

Case 2: A 41-year-old man with a history of OUD, depression and GAD was admitted with cervical osteomyelitis requiring neurosurgical intervention. A long schedule microinduction was administered, along with perioperative opioids, resulting in maintenance of buprenorphine without precipitating opioid withdrawal symptoms. He was titrated to buprenorphine-naloxone 6-1.5mg, stabilized and discharged with outpatient psychiatry follow up.

Case 3: A 69-year-old man with a history of OUD admitted for an infected lower extremity ulcer was found using fentanyl in the hospital and demonstrating signs of opioid withdrawal. He was started on a low dose methadone schedule in tandem with a short schedule microinduction, which collectively resolved his withdrawal symptoms. He was titrated to buprenorphine-naloxone 4-1mg BID dose, methadone was discontinued and he was discharged with follow up.

Discussion

These cases demonstrate the significant clinical utility of buprenorphine microinduction in the hospital setting. This method is particularly useful for patients with co-occurring pain, fentanyl exposure, or a history of precipitated withdrawal with buprenorphine. By using microinduction protocols, C-L psychiatrists can overcome common barriers associated with conventional buprenorphine initiation.

Challenges associated with implementing microinduction protocols include need for prescriber training, limited availability of low dose buprenorphine formulations on hospital formularies, and patient hesitancy to try a new induction strategy.

CONCLUSIONS

C-L psychiatrists can play a greater role in offering life saving medication for OUD. Randomized, placebo controlled trails still need to establish efficacy, optimal dosing and timing of microinduction in conjunction with various full agonist opioids. However, various case reports and retrospective cohort studies have provided reassuring evidence for its safety and efficacy.

REFERENCES

1. Ahmed, S, Bhivandkar S, Lonergan BB, Suzuki J. Microinduction of Buprenorphine/Naloxone. A Review of the Literature. Am J Addict. 2021;30(4):305-15.
2. De Aquino JP, Parida S, Sofuoglu M. The Pharmacology of Buprenorphine Microinduction for Opioid Use Disorder. Clin Drug Investig. 2021;41(5):4325-36.

Corresponding author: Ariel Claman, MD, Ariel.Claman@nyulangone.org