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Acute Pain Management Patient on Suboxone® Buprenorphine/Naloxone Presenting for Anterior Cervical Discectomy and Fusion

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Introduction

Acute surgical pain management in the perioperative period for scheduled surgical procedure is challenging as there are no consensus guidelines for buprenorphine/naloxone (Suboxone®) use in the perioperative period. Here we present management of such a patient who presented to surgery with Suboxone® use on the day of the surgery.

Case Description

A 44-year-old woman on 12 mg Suboxone® per day with past history of narcotic addiction, with radiculopathy secondary to C3-4 disc herniation, presented for anterior cervical discectomy and fusion. She received oral acetaminophen preoperatively. During general anesthetic with endotracheal intubation, her multimodal pain management plan included intraoperative intravenous administration of fentanyl, ketorolac, dexmedetomidine bolus followed by infusion, lidocaine bolus followed by infusion, magnesium infusion, ketamine and postoperative administration of Suboxone®. She was comfortable in the postoperative period.

Case Discussion

Characteristics of Suboxone® (buprenorphine/naloxone)¹

Suboxone® is an alternate mode of pain management in the opiate dependent. As per Cochrane database review, It is equally as effective as methadone.²

BUPRENORPHINE:

- ✓ Partial Mu receptor agonist
- ✓ High affinity to Mu receptor
- ✓ 1000 times more potent compared to morphine in its affinity to Mu receptor
- ✓ Slowly dissociates from Mu receptors
- ✓ Partial Kappa receptor antagonistic activity
- ✓ 1000 times more potent at Kappa receptor activity
- ✓ 1000 times more potent than morphine at Kappa receptor antagonistic activity
- ✓ It displaces other opiate agonists such as fentanyl, hydromorphone, methadone or morphine
- ✓ Has ceiling effect due to partial agonistic activity at Mu receptor
- ✓ Greater safety profile in the event unintentional overdose compared to other opiates
- ✓ Less respiratory depression compared to other opiates
- ✓ Low potential for abuse or physical dependence

NALOXONE:

- ✓ Naloxone is added to reverse the effect of intravenous opiate abuse.

Pain management options in a patient on Suboxone®¹

- Stop Suboxone® and add full opiate agonist preoperatively
- Continue Suboxone® and add high dose opiates to the pain management regimen
- Continue Suboxone® and give it additionally in the perioperative period

Multimodal Pain Management Approach in Patient on Suboxone®

There is no consensus about how to manage acute pain in a patient on Suboxone®. However, a multimodal approach should be considered for acute pain management in surgical patients.

- ✓ Regional anesthesia: Peripheral nerve blocks or neuraxial blockade
- ✓ High dose opiates
- ✓ Intravenous lidocaine
- ✓ Gabapentin or pregabalin
- ✓ Non-steroidal anti-inflammatory drugs
- ✓ Acetaminophen
- ✓ Ketamine
- ✓ Magnesium

CONCLUSION

We successfully managed the pain in the perioperative period with a multimodal approach using high dose fentanyl, intravenous acetaminophen, ketorolac, magnesium, ketamine and lidocaine.

References

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2. Nielsen S, Larance B, Degenhardt L, Gowing L, Kehler C, Lintzeris N: Opioid agonist treatment for pharmaceutical opioid dependent people. *Cochrane Database Syst Rev.* 2016; 9:CD011117