

# Opioid Free Anesthetics in Anesthesia Care

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## Introduction

Historically, opioid drugs have been used as the standard of care for pain management in patients undergoing surgery. Opioid drugs are administered during the perioperative and postoperative periods of surgery in most cases to relieve pain. Their analgesic properties and history of use make opioid drugs an attractive choice for anesthesia providers when formulating an anesthetic plan.

While opioids are an appropriate choice for pain relief for many patients, the side effects and addictive properties make opioids dangerous to others (Bohringer et al. 2020). This creates a need to educate anesthesia providers on safe alternatives to these medications. Side effects of opioid drugs include post-operative nausea and vomiting, ileus, pruritis, and respiratory depression. These side effects can lengthen recovery times and lead to patient discomfort.

## Opioid Side Effects

Side Effect	Concerns/Patients Affected
Decrease respiratory drive	Patients at increased risk of respiratory failure including patients with COPD, asthma, morbidly obese
Postoperative ileus	Anastomotic leak in patients after bowel surgery can occur
Postoperative nausea and vomiting	Valsalva maneuver that occurs with vomiting can lead to CSF leaking, or bleeding

**Table 1:** Side effects of opioids and the patient populations that are affected.

## Opioid Epidemic

In the US, opioids were involved in 80,411 overdose deaths in 2021 (75.4% of all drug overdose deaths). The opioid crisis has been attributed to the rise of prescription use of opioids starting in the 1990s. Synthetic opioids such as fentanyl pose a significant risk for overdose because of the high potency and the ability to distribute these drugs illegally (CDC, 2023).

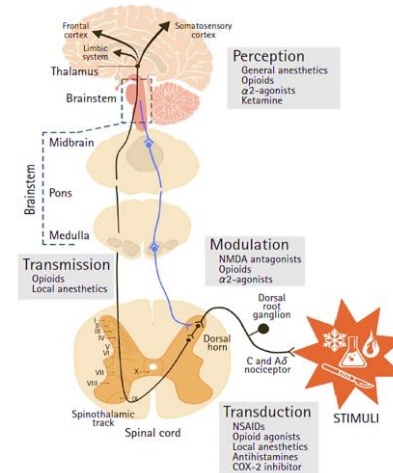
The opioid epidemic has affected the patient population seen by anesthetic providers. Chronic opioid users are Opioid-tolerant. Patients in recovery from opioid addiction may request an opioid free anesthesia plan.

## Opioid-Sparing Techniques

Opioid-sparing techniques utilize multimodal analgesia, including low doses of opioids. A multimodal approach allows each part of the pain transmission pathway to be blocked. The advantage is improved pain relief compared to OFA while reducing the side effects of opioids (Harsha et al. 2021).

## Recommendations/Conclusion

In current practice, it is not common to perform opioid-free anesthesia with general anesthesia. In pre-op, providers should manage expectations when using OFA. It is recommended to use multimodal analgesia (**Figure 1**) to avoid the overuse of opioids intraoperatively. Anesthesia providers serve a vital role in educating patients on the risks associated with opioids, including dependence, addiction, and overdose.



**Figure 1:** Pain transmission path

## Opioid Alternatives

Medication Name	Drug Type	Dosage
Dexmedetomidine (Precedex)	Alpha-2 agonist	0.25 mcg/kg boluses (0.5-mcg/kg/hr infusion)
IV Acetaminophen (Ofirmev)	Non-Specific COX inhibitor	15 mg/kg every 6 hours
Ketorolac (Toradol)	Non-steroidal anti-inflammatory drug	30 mg every 6 hours
Ketamine (Ketalar)	NMDA receptor antagonist	0.25 mg/kg boluses (0.1 mg/kg/hr infusion)
Lidocaine (Xylocaine)	Amide Local Anesthetic	1 mg/kg loading dose (1-2 mg/kg/hr infusion, Rate reduced by 50% every 6 hours)
Gabapentin	GABA Analogue	300 mg PO daily in pre-op
Magnesium	NMDA receptor antagonist	30 mg/kg loading dose (10 mg/kg/hr infusion)
Benadryl (Diphenhydramine)	Antihistamine	Typically give 25-50 mg PO or IV for sedation Pre-Op

**Table 2:** Opioid alternatives are listed with the appropriate dose in absence of anesthesia

## References

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