
Certified Registered Nurse Anesthetists face the challenge of administering anesthesia and managing perioperative pain in a growing population of patients with substance use disorders (SUDs) including Opioid Use Disorder (OUD), Alcohol Use Disorder (AUD), and addiction to illicit or prescription drugs. Chronic opioid abuse can cause opioid tolerance, allodynia, and hyperalgesia, further complicating acute pain management. The associated physiological changes in patients recovering from SUDs, as well as potentiating a relapse in the perioperative period, pose unique challenges for the anesthesia provider.¹

Opioid abuse affects more than 2 million Americans and accounts for almost 100 deaths per day in the United States.¹ Over-prescription of opioids is a major contributor to opioid misuse after surgery,² with 61% of prescribed opioids remaining unused. This equates to 4.5 days of unnecessary opioid coverage,³ increasing the possibility for diversion, long-term dependence, and addiction. Individuals in recovery from substance abuse face relapse rates of up to 90%¹ and are at risk of a lethal overdose due to loss of opioid tolerance.¹

Relapse is the biggest fear of SUD patients in recovery⁸ and undergoing a surgical procedure places these individuals at an increased risk for relapse due to the associated pain and psychological distress.⁸ Individuals with SUDs may be at

risk for opioid induced hyperalgesia (OIH), increasing their sensitivity to pain⁴ and possibly causing the patient to self-medicate by illicit means.⁹ Anesthesia providers must be aware of the high probability of relapse in the perioperative period and extensive forethought must be given to manage surgical discomfort¹⁰ and minimize this risk.

CRNAs play an integral role in relapse prevention by understanding the spectrum of recovery and relapse and optimizing pain management. The objective of this systematic review is to appraise techniques by anesthesia providers to reduce the risk of relapse in surgical patients recovering from substance abuse.

RESULTS

Substance use disorders (SUD) require multimodal treatment for recovery including pharmacological interventions and behavioral support mechanisms.^{1,23} Psychosocial treatment is an essential component of comprehensive substance abuse treatment.²⁴ Avoidant strategies and frequent use of 12-step programs significantly reduced the rate of relapse.²⁵ This review identified non-pharmacological measures to aid in relapse prevention.

Existing Approaches to Caring for Recovering SA Patients

The AANA published practice considerations for the SUD

Non opioid analgesics, anti-inflammatories, anti-epileptics, caffeine, and NMDA antagonists are adjuvants for use in the peritoperative period.¹ Non-steroidal anti-inflammatory adjuvants include Acetaminophen, Ibuprofen, and Celecoxib.¹ Anti-epileptic medications including Gabapentin and Pregabalin and¹ NMDA antagonists including Dextromethorphan and Ketamine.¹ In addition to treating pain, certain medications may also aid in reduction in the desire to abuse alcohol or drugs. Gabapentin,²¹ baclofen¹⁶, and ketamine¹⁷ are pharmacological interventions shown to reduce relapse rates. Abstinence rates for baclofen after 6 months were 62% compared to 10% when patients were prescribed benfotiamine.¹⁶ Continuous perioperative infusions of ketamine, lidocaine, and esmolol have

