Perioperative Considerations for the Patient with Opioid Use Disorder on Buprenorphine, Methadone, or Naltrexone Maintenance Therapy

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KEYWORDS

• Buprenorphine • Methadone • Naltrexone • Perioperative
• Multi modal pain management • Opioid use disorder • Addiction • Relapse

KEY POINTS

- Buprenorphine and methadone for the treatment of opioid use disorder (opioid addiction) should be continued in the perioperative period for most patients.
- Oral naltrexone should be discontinued 2 days before surgery and resumed once additional opioids are no longer needed.
- Extended-release injectable naltrexone is active for 28 days with peak at 7 days.
- Multimodal pain management is critical for patients on chronic opioid therapy. Regional anesthesia, ketamine, nonsteroidal anti-inflammatory drugs, acetaminophen, dexamethasone, lidocaine, magnesium, gabapentinoids, dexmedetomidine, esmolol, and mindfulness relaxation training have all been shown to reduce opioid use and decrease postoperative pain.

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INTRODUCTION

The United States is facing the worst drug crisis in US history, with more than 63,600 drug overdose deaths in 2016, almost double the deaths caused by traffic accidents or gun violence.[1] Two-thirds of drug overdose deaths are opioid related. Furthermore, overdose death is only 1 metric by which to measure the impact of the epidemic. By conservative estimates, 2.5 million people in this country are addicted to opioids (prescription and illicit), and more than 11 million people in the United States are misusing prescription opioids obtained directly or indirectly from a doctor's prescription (according to the 2016 National Survey on Drug Use and Health).[2] Prescription opioid misuse, addiction, and overdose cost the US more than $78 billion annually.

MEDICATION-ASSISTED TREATMENT OF OPIOID USE DISORDER

The Food and Drug Administration (FDA) has approved 3 medications to target opioid use disorder/addiction:

1. Methadone (generic oral and injectable forms, Dolophine, or Methadose)
2. Buprenorphine alone (generic sublingual tablets or Probuphine intradermal implant) or combined with naloxone (Suboxone, Zubsolv, Bunavail, or generic sublingual tablets)
3. Naltrexone (generic tablets, ReVia, or Vivitrol long-acting injectable form)

The first 2 fall into a category called opioid agonist treatment, because they are both long-acting opioids that are believed to decrease the physiologic cravings that drive drug-seeking behavior. The third, naltrexone, acts as a deterrent by blocking the opioid receptor, preventing other opioids from binding. It may also reset the reward pathway through an opponent process mechanism.

All 3 of these medications, methadone maintenance, buprenorphine products, and naltrexone (oral or injectable), comprise in part what is called medication-assisted treatment of opioid use disorder. Medication-assisted treatment is defined by the Substance Abuse and Mental Health Services Administration as the use of medications in combination with counseling and behavioral therapies for the treatment of substance use disorders.

Multiple placebo-controlled trials across continents and decades demonstrate the effectiveness of opioid agonist treatment (methadone and buprenorphine) in opioid use disorder.[3–5] Both methadone and buprenorphine result in significant reductions in overdose death, illicit drug use, criminal activity, and HIV and hepatitis C incidence. These treatments are also associated with improved health status and overall improved quality of life. By contrast, short-term use of opioid agonist therapy as part of a "detoxification protocol" is rarely effective.[6,7] Patients randomized to placebo withdrawal, compared with methadone or buprenorphine maintenance treatment, are 2 times to 4 times more likely to be dead at a year.[3,8]

A Cochrane meta-analysis of oral naltrexone showed no difference compared with placebo when comparing retention in treatment, use of illicit opioids, or side effects, a year after initiating treatment.[9] However, 2 recently published studies comparing injectable extended-release naltrexone (XR-NXT) to buprenorphine-naloxone found comparable rates of retention and abstinence from heroin and other illicit drugs at 12 weeks[10] and 24 weeks,[11] respectively. The latter study[11] showed that initiating patients onto injectable naltrexone was more difficult than on buprenorphine, which may have significant real-world implications, despite comparable efficacy in this study.