Opiate Addiction and Considerations for Anesthesia

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References

Multimodal Options for Anesthesia Providers
Anesthesia providers can utilize a variety of nonopioid medications to reduce the overall use of opiates required for pain relief with opioid tolerance and pain management.

Common Myths to Avoid
1. Opioids are used only for moderate pain.
2. Opioids are used only for acute pain.
3. Only patients in chronic pain use opioids.
4. Only patients with severe pain use opioids.
5. Opioids cause respiratory depression.
6. Opioids cause sedation.
7. Opioids cause constipation.
8. Opioids cause hallucinations.

Pathophysics of Addiction
The amygdala plays a critical role in the reward system by regulating emotional responses to stimuli. In patients with opioid use disorder, the amygdala volume is significantly decreased compared to healthy controls. This decrease in volume is associated with an increased risk of relapse. Additionally, the amygdala volume is positively correlated with the duration of opioid use. These findings suggest that the amygdala may be a target for intervention in the treatment of opioid addiction.

Pathophysiology of Opioid Addiction
The amygdala is associated with reward and motivation. Opioids act on the dopaminergic system to increase dopamine synthesis, which is responsible for the rewarding effects of opioids. This increase in dopamine leads to increased reward seeking and increased risk of relapse. Additionally, the amygdala is associated with stress and anxiety, which are common in opioid addiction. These factors contribute to the difficulty of opioid addiction treatment.

Evaluation for Preoperative Patients
Nurses and nurse anesthetists will encounter patients with known and new onset of opioid use. It is essential to properly evaluate patients so that appropriate pain management strategies can be implemented.

1. Identify the patient's overall condition.
2. Obtain a complete medical history.
3. Assess for comorbidities in addicted patients.
4. Identify pain management history.
5. Assess for withdrawal symptoms.

Lack of knowledge and training in opioid addiction treatment is a major barrier to effective pain management. Opioid addiction treatment requires a multidisciplinary approach, including medical, psychological, and social services. The goal of opioid addiction treatment is to reduce the risk of relapse and improve the patient's quality of life.

Considerations or Providers
It is important for anesthesia providers to remain current on the latest research and guidelines for the treatment of opioid addiction. The current climate places many restrictions on opioid use and abuse. Anesthesia providers can play a vital role in improving patients' access to resources and providing for patients basic needs. Often providers will experience a disjunct with a patient's expectations for pain management and the reality of what is available for their pain management.

The current climate places many restrictions on opioid use and abuse. Anesthesia providers can play a vital role in improving patients' access to resources and providing for patients basic needs. Often providers will experience a disjunct with a patient's expectations for pain management and the reality of what is available for their pain management.

Gray matter volume normal in the hypothalamus following one month of daily morphine exposure. In Sagittal view of the coronal plane, the abnormal hypothalamic volume at baseline is deformed by the cranium and the surrounding brain. The baseline morphine-hypothalamic volume is normalized in the morphine group (right). Dark grey bar shows the post-treatment change in hypothalamic volume in the morphine group (left) relative to the normal morphine group (right). Light grey bar indicates the post-treatment change in hypothalamic volume in the placebo group. The placebo group shows no significant change in hypothalamic volume following one month of daily morphine exposure. (Younger et al., 2012)

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Opioid Statistics in the United States
According to the Center for Disease Control and Prevention (CDC), from 1999 to 2017 around 218,000 Americans have died from prescription opioid overdoses. From 1999 to 2017, opioid-related deaths increased from 1,074 to 47,600. The opioid overdose death rate per 100,000 Americans was 0.02 in 1999 and 1.70 in 2017. Despite this reduction, in 2017 there has been a push by the government to promote awareness and promote alternative pain management strategies. For example, the Centers for Medicare & Medicaid Services (CMS) have implemented stricter guidelines for prescription and non-prescription opioids to promote awareness and promote alternative pain management strategies.

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Identify population at risk.
Oxycodone is a schedule II opioid with a high abuse potential. Oxycodone is available in oral, transdermal, and intranasal forms. Oxycodone is frequently prescribed for chronic pain conditions such as cancer.

Signs and Symptoms of Opioid Addiction
Opioid withdrawal
Narcissism
Pilocerection
Insomnia
Vomiting
Sweating
Miosis
Piloerection
Yawning
Signs and Symptoms of Opioid Addiction
Opioid withdrawal
Narcissism
Pilocerection
Insomnia
Vomiting
Sweating
Miosis
Piloerection
Yawning

Pathophysiology of Addiction
The amygdala attributes emotional value to cues. This complex brain structure also plays a critical role in the reward system and stress responses. Opioids act on the dopaminergic system to increase dopamine synthesis, which is responsible for the rewarding effects of opioids. This increase in dopamine leads to increased reward seeking and increased risk of relapse. Additionally, the amygdala is associated with stress and anxiety, which are common in opioid addiction. These factors contribute to the difficulty of opioid addiction treatment.