Perioperative Considerations for the Patient Utilizing Cannabinoid-based Medicines and Products

PLEASE POST

Pre-operative considerations:

Is it clinically useful to perform a drug screen for the determination of acute exposure to cannabinoids?

Drug screens for the presence of cannabinoids and metabolites of cannabinoids will not inform the healthcare provider of the recency of marijuana use, as cannabinoids can remain in the body for several weeks.

"Cannabis Use Disorder" has increased in prevalence from 2010 to 2015. Is active cannabis use disorder associated with a change in overall perioperative morbidity, mortality, length of stay, or costs?

According to a retrospective population-based cohort study of 4,186,622 patients undergoing elective surgery in the United States, active cannabis use disorder is not associated with a change in overall perioperative morbidity, mortality, length of stay, or costs. However, active cannabis use disorder is associated with a meaningful increase in the risk of postoperative myocardial infarction (MI).

Is marijuana use associated with an increased or decreased risk of thromboembolism?

According to literature reviews, the use of marijuana is associated with an increased risk of thromboembolism. However, there is evidence that cannabinoids have an anticoagulant effect, as well. In addition, some cannabinoids (including THC and CBD) interact with anticoagulant agents such as warfarin, and increase the INR. These factors should be considered prior to performing neuraxial blocks and placing invasive lines in patients who use marijuana.

Does THC administration alter gastric emptying?

Yes. According to a double blind randomized controlled study of human volunteers, gastric emptying of solid food was slowed due to THC administration - from an average of 30 minutes to 120 minutes. This, in turn, may impact the administration of anesthesia and increase the risk of aspiration.

Can smoking marijuana in the pre-operative period help with bronchodilation?

Laboratory studies have shown that vaporized or ingested THC may lead to bronchodilation and decreased airway resistance, BUT smoking marijuana can lead to airway hyperreactivity, as often seen with tobacco cigarette smoking. Considering that marijuana burns at higher temperatures than tobacco, marijuana smoking may be more irritating to airways.

Some cannabinoid-based medicines are used to treat chemotherapy-induced nausea/vomiting. Have cannabinoid-based medicines been shown to be effective in the treatment of post-operative nausea/vomiting?

Some patients presenting for surgery may admit to using "Spice" or "K2" or other non-FDA approved synthetic cannabinoids. Do "Spice" and "K2" alter coagulation?

Yes. Both "Spice" and "K2" may cause persistent bleeding. The prothrombin time and the INR may be elevated. Bleeding caused by these synthetic cannabinoids is NOT ameliorated by the administration of vitamin K or FFP.

Intra-operative considerations:

Do regular marijuana smokers who are undergoing anesthesia require higher doses of Propofol for the insertion of a laryngeal mask airway?

Yes. Results of a prospective, randomized, single blinded study, of regular marijuana users showed that higher doses of Propofol were needed to achieve loss of consciousness, adequate jaw relaxation and depression of airway reflexes for insertion of a laryngeal mask airway (LMA).

On average, do patients who use marijuana require more fentanyl, more midazolam, and more Propofol to be adequately sedated for an endoscopic procedure compared to patients who do not use marijuana?

Yes. According to a study evaluating the sedation requirements of Colorado patients undergoing an endoscopic procedure, the patients who smoked or ingested marijuana on a daily or weekly basis required 14% more fentanyl, 20% more midazolam and 220% more Propofol.

Smoking and vaporizing marijuana may induce an increase in heart rate. Is smoking marijuana associated with other cardiac electrical effects?

Yes. THC may increase catecholamine levels and therefore may theoretically increase the likelihood of dysrhythmias. Various cardiac electrical effects have been described in observational studies. Atrial fibrillation was one of the more commonly reported dysrhythmias.

Marijuana-induced psychosis can present as what other intra-operative or post-operative conditions/ diagnoses?

Marijuana-induced psychosis can present with fever, hypertension, and tachycardia leading to the consideration of malignant hyperthermia, serotonin syndrome, intoxication with Ecstasy (aka Molly), neuroleptic malignant syndrome or thyrotoxicosis.

Post-operative considerations:

Patients are often instructed not to smoke marijuana for a few days prior to surgery. How readily do withdrawal symptoms develop?

In the case of chronic marijuana smokers, withdrawal symptoms can develop after just 1 day of not smoking marijuana. Of note, not only do females develop dependence more rapidly with prolonged use, but females also have more severe withdrawal symptoms.

There are no general guidelines to treat the symptoms of marijuana withdrawal, but it has been reported that benzodiazepines and synthetic THC products (dronabinol, nabilone) used for the treatment of chemotherapy induced N/V may help alleviate some of the symptoms.

Do opioid antagonists impact the effects of cannabinoids?

Yes. For example, it has been shown that the administration of opioid antagonists blocks some of the effects of THC.

Experimental pain studies indicate that cannabinoids may be an effective therapy for acute and chronic pain. Have the results of clinical studies also shown that cannabinoids are effective at alleviating acute and chronic pain?

In contrast to experimental studies, the results of clinical trials with cannabinoids provide only moderate-quality evidence for the relief of chronic pain. Also, the analgesic effects of cannabinoids have not been found to be superior to placebo in acute pain. Importantly, pre-operative marijuana use may increase post-operative perceived pain.

Free sign up for the "Answer of the Day" resource!

Utah 4 Hour CME course $50 discount