Cannabis and Anesthesia: Improving Confidence and Knowledge Among Anesthesia Providers

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Introduction

- ❑ Anesthesia providers are likely to care for patients who use marijuana as its legalization continues to rise in the United States
- ❑ Cannabis is a plant from the genus name *Cannabis sativa*; the term "cannabis" is often used to describe the cannabis plant as well as *Cannabis* constituents like "marijuana" and other intoxicant preparations (Small, 2015)
  - ❑ Other names include: marijuana, weed, pot, ganja, hemp, hashish, bhang, green, bud
- ❑ THC (the active constituent delta-9-tetrahydrocannabinol) concentrations found in marijuana are increasing (Horvath et al., 2019)
- ❑ Marijuana has interactions with endogenous receptors as well as many medications used by anesthesia providers
- ❑ There are no widely accepted guidelines outlining the medical management of marijuana-using patients undergoing surgery
- ❑ Anesthesia providers are responsible for keeping up to date with the latest evidence while optimizing patient welfare throughout the entire perioperative period

Background and Significance

- ❑ 1800s: Marijuana's earliest use as a pain adjuvant in the United States
- ❑ 19th century: Opium was more popular, but cannabis products were available as OTC preparations until 1941 (Horvath et al., 2019)
- ❑ 1920s: Cannabis is deemed a narcotic (Horvath et al., 2019)
- ❑ 1956: Possession of cannabis punishable by 2-10 years in prison (Horvath et al., 2019)
- ❑ 1960s: the movement to decriminalize marijuana began
- ❑ 1970: US substance abuse act classified marijuana as a schedule 1 drug (Schrot & Hubbard, 2016)
- ❑ 2020: *medical* marijuana laws: 33 states and the District of Columbia & legal *recreational* marijuana laws: 11 states (Yu et al., 2020)
- ❑ Lack of regulating ability in the United States regarding the exact amounts of THC in various forms of cannabis (Alexander & Joshi, 2019)
- ❑ Of the hundreds of cannabinoids available, each one has variable and unpredictable effects (Alexander & Joshi, 2019)
- ❑ Practice recommendations are difficult to make

Methodology

- ❑ Quantitative correlational prospective design
- ❑ Sample size: All CRNAs and RRNAs who utilize the NJANA online educational platform (n=26)
- ❑ Intervention: Pre and post perceived confidence survey & pre and post knowledge survey
  - ❑ Online module highlighting pharmacokinetics and pharmacodynamics of marijuana, and implications during the perioperative period
- ❑ Measures/Analysis: Perceived confidence and knowledge of the learner in the perioperative management of the marijuana using patient
  - ❑ Pre and post module confidence and knowledge surveys using Qualtrics™
  - ❑ Confidence level assessed prior to the intervention using an adapted version of the General Self-Efficacy (GSE) Scale that measures perceived confidence via Likert scale questions
  - ❑ Knowledge survey with multiple choice questions

	Not at all true	Barely true	Moderately true	Exactly true
1. I am confident in my ability to care for chronic cannabis users during the perioperative period.	1	2	3	4
2. I am confident in my ability to find evidence-based resources regarding anesthetic implications of chronic cannabis users.	1	2	3	4
3. I am confident in providing an anesthetic plan that is both individualized and effective to the chronic cannabis user.	1	2	3	4
4. I am confident I can explain the anesthetic implications of chronic cannabis use.	1	2	3	4
5. I am confident I can explain the multitude of effects that cannabis has on the human body.	1	2	3	4

Survey framework adapted from the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1993).

Data Analysis and Results

- ❑ Certified Registered Nurse Anesthetists (CRNA's) & Resident Registered Nurse Anesthetists (RRNA's) n = 26
- ❑ **Confidence data:**
- ❑ Data normally distributed as evidenced by the Shapiro-Wilk test
- ❑ Paired t-test employed showed statistical significant difference between pre-module and post-module confidence
- ❑ $p = 0.000$

Knowledge data:

- ❑ **Knowledge data:**
- ❑ Data normally distributed as evidenced by the Shapiro-Wilk test
- ❑ Paired t-test again employed which showed statistical significant difference between pre-module and post-module confidence
- ❑ $p = 0.000$

Practice Recommendations/Discussion

- ❑ This online learning module served to provide education to bridge the gap between the anesthesia provider's knowledge and clinical practice when caring for marijuana users during the perioperative period
- ❑ Despite the practice recommendations of these authors, patients should always be evaluated and treated individually and that clinical scenarios can be unique and fluid; providers should be alert to these considerations and utilize the recommendations as a framework within which to manage this population.
- ❑ There is a dire need for more high-level evidence and research in human subjects using marijuana who undergo anesthesia. In time, research efforts may illuminate practice suggestions that differ from the ones ascertained from this research study.

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