

Project Title: Cannabis Use's Affect on the Endocannabinoid System and Anesthetic Management in Patients Undergoing Traumatic Orthopedic Surgery
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The legalization regarding medicinal and recreational cannabis use has led to an increase in overall among the adult US population over the age of 21. As such, there has been an increase in the prevalence of cannabis use for pain management. This has also likely led to an increase in of cannabis users undergoing elective and non-elective surgeries. Research suggests that cannabis use can impact perioperative outcomes. There is a need to determine the effects of frequent cannabis use among chronic cannabis users requiring anesthetic care after an orthopedic trauma surgery. Clinicians should be aware of the effects of cannabis use in order to assess potential drug-drug interactions, side effects, and contraindications; therefore, an understanding of how cannabis use affects the endocannabinoid system and general anesthetic management is essential. Preliminary data has revealed differences on anesthetic management during surgery between patients who test positive for a tetrahydrocannabinol (THC) urine drug screen compared to those who test negative. The proposed study will investigate the correlation of cannabis exposure with cardiovascular differences among adult orthopaedic trauma patients from the UCI Health Emergency Department. Both cannabis and non-cannabis users will be enrolled in the study. After receiving consent from patients who meet the eligibility criteria, blood samples will be drawn before, during, and after surgery by research staff. Blood samples will be delivered to the Piomelli Lab at UCI for analysis of endocannabinoid levels. Eligible participants will be required to have a urine drug screening completed. Demographic information, such as age and sex will be collected to determine any differences in effects of anesthesia on the endocannabinoid system. This study is a first step in filling research gaps to understand the effects of chronic cannabis use on the endocannabinoid system and anesthetic care. Future studies will utilize this data to test manipulation of the endocannabinoid system via cannabis related compounds and/or medications to improve cardiovascular stability and pain management in the perioperative period.