Cannabis Use and Postoperative Opioid Consumption After General Anesthesia

Chandra Harrell, BSN, RN
Monica Jenschke, PhD,CRNA
Texas Christian University

INTRODUCTION

- Cannabis accessibility and use continues to increase with changes in state laws and societal perceptions.
- No clear clinical practice guidelines based on high levels of evidence exist delineating best practices for postoperative pain control of cannabis users.
- Uncontrolled pain can hamper workflow and decrease patient satisfaction, as well as impair surgical recovery.
- Identifying differences in postoperative pain control in this patient population will help improve patient outcomes and streamline provision of care.
- There is a lack of research determining the effects of cannabis on postoperative pain control.

OBJECTIVE

- Examine the relationship, if any, in postoperative opioid consumption in cannabis users (CU) compared to non-cannabis users (NCU)
- PICOT: in adults aged 18 years or older undergoing general anesthesia, how does patient reported cannabis use compared to nonuse impact total opioid consumption in the postoperative period up to 6 months after surgery?

METHODS

- EMBASE, Pubmed, and MEDLINE were searched
- Keywords: *cannabis, marijuana, postoperative, recovery room pain, morphine, morphine milligram equivalents*
- Inclusion criteria: patient age 18 years or older, general anesthesia, postoperative morphine milligram equivalent (MME) measured.
- Exclusion criteria: age less than 18 years, patient not undergoing general anesthesia, no numerical measure of opiate use, no post-op measurement of opiate consumption.
- Search retrieved 69 results across the 3 databases searched
- Highest quality of available evidence selected, resulting in 5 retrospective cohort analysis included.
- IRB/IACUC approval does not apply to this evidence-based project.

• **There is no definite relationship** between preoperative **cannabis use** and postoperative **opioid consumption…yet!**

Author	Study Design/Level of Evidence	Sample Size	Population	Time Frame of Opioid Consumption and Findings
Khalid et al[1] 2023	RCA/III	N = 454	-Single level lumbar fusion	6 months postop -Significantly less POOC per day by CU compared to NCU
Liu et al[2] 2019	RCA/III	N = 310	-Multi-level fusion/decompression, -hip, knee surgery	24-hour postop -Spine: no difference in POOC between CU vs NCU -Hip/knee: significantly greater POOC by CU compared to NCU
Moon et al[3] 2024	RCA/III	N = 301	-1-2 level PSF	MME per hospital day -Significantly greater POOC per day in combined inpatient CU -no difference between CU vs NCU in opioid naïve patients.
Ong et al[4] 2023	RCA /III	N = 1092	-Total hip arthroplasty	Inpatient stay postoperative total -no difference between CU vs NCU in POOC.
Wiseman et al[5] 2022	RCA/III	N = 114	-Open/LS gynecological surgery	12-hour postop; 36-hour postop -Significantly greater POOC in CU vs NCU at 36 hours post-op LS -No difference in CU vs NCU at 12 hours or 36 hours open surgery.

Table. Study Findings Measuring Opiate Requirements of NCU compared to CU.
Abbreviations: CU, cannabis users; LS, laparoscopic surgery; MME, morphine milligram equivalent; NCU, non cannabis users; RCA, retrospective cohort analysis; POOC, post operative opioid consumption; PSF, posterior spinal fusion

REVIEW of LITERATURE

- The 5 selected studies reported confounding results (Table)
- One study reported no difference in CU vs NCU in consumed MME.[4]
- One study reported a statistically significant reduction in MME in CU.[1]
- Three studies reported mixed findings between CU and NCU, depending on study established subgroups.[2,3,5]

CRITICAL APPRAISAL and SYNTHESIS

- Each study contained challenges to internal and external validity
- Accuracy of data was limited by retrospective analysis
- Positive identification of cannabis use was limited to patient self-report leading to potential inaccurate CU being incorporated into NCU groups.
- Three studies utilized post-discharge MME measurements based on filled opioid prescriptions and averaging MME/day.[1,3,4]
- Basing MME/day or MME total on filled prescriptions is a challenge to accuracy of measurement.
- No conclusion can be made on postop opioid requirements of CU undergoing general anesthesia compared to NCU.

RECOMMENDATIONS for PRACTICE / CONCLUSIONS

- Definitive practice choices cannot be established from current evidence.
- Providers should exert caution and careful observation of opioid requirements of cannabis users.
- Cannabis users might have varied postoperative opioid requirements due to confounding conditions such as chronic pain, cancer, anxiety that may contribute to increased opioid requirements
- Wide variation is present in postoperative opioid requirements of CU, history of cannabis use alone cannot predict opioid requirements.
- Further study is needed to better identify what relationship is present, if any, with cannabis use and postoperative pain.

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