

Evaluating Acute and Long-Term Chronic Pain and Quality of Life Outcomes in Patients with Cannabis Use Disorders Undergoing Complex Reconstructive Surgery

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Background

Cannabis use disorders (CUDs) are growing in prevalence throughout the U.S., but questions remain about perioperative counseling regarding cannabis cessation prior to reconstructive surgery. Furthermore, cannabis use’s effects on long-term postoperative outcomes are unknown.

Aim 1: To assess whether pre-existing CUD affects postoperative, anesthesia-related, and long-term outcomes in patients undergoing complex reconstructive flap-based procedures

Aim 2: To compare complication rates associated with CUD to those of nicotine dependence in patients undergoing same complex reconstructive surgeries

Methods

Study Design

- Retrospective cohort study using TriNetX Research Network
- Inclusion: ≥ 18 y/o, Pedicled or Free Flap Surgeries
- Propensity score matching to control for demographics, comorbidities, psychosocial conditions

Cohorts

Flap Pts with
CUDs

Flap Pts w/o
CUDs

Flap Pts with
Nicotine Use

Flap Pts w/o
Nicotine Use

Results

Cohorts

- 4366 CUD pts vs. 4366 matched non-CUD pts
- 22,750 nicotine-users vs. 22,759 matched non-users

Outcomes

- CUD associated with **dehiscence, infection, anesthesia-induced confusion, nausea, hypotension, blood transfusions** (see Table 1)
- No significant differences seen in long-term chronic pain, opioid use
- Nicotine associated with dehiscence, infection, hematoma, OR return, sepsis, anesthesia complications, chronic pain, opioid disorders, depression

Table 1. Post-surgical (within 3 months) and post-anesthesia (within 1 week) events following complex reconstructive surgeries in patients with preoperative CUDs vs. patients without CUDs

Outcome	Cohort	Matched Patients	Affected Patients	Risk	Risk Difference	95% CI	P-Value	Risk Ratio	95% CI
Dehiscence	Non-Users	4359	478	10.97%	-2.29%	(-0.03663,-0.00925)	0.001	0.827	(0.738,0.927)
	Users	4359	578	13.26%					
Infection	Non-Users	4359	972	22.30%	-3.14%	(-0.04931,-0.01354)	0.0006	0.876	(0.813,0.945)
	Users	4359	1109	25.44%					
Hematoma	Non-Users	4359	246	5.64%	0.21%	(-0.00754,0.01167)	0.6735	1.038	(0.873,1.234)
	Users	4359	237	5.44%					
Seroma	Non-Users	4359	97	2.23%	-0.46%	(-0.0108,0.0191)	0.1663	0.829	(0.636,1.082)
	Users	4359	117	2.68%					
Sepsis	Non-Users	4359	312	7.16%	0.05%	(-0.01035,0.01127)	0.9337	1.006	(0.865,1.171)
	Users	4359	310	7.11%					
DVT/PE	Non-Users	4359	271	6.22%	0.99%	(0.00011,0.01962)	0.0474	1.189	(1.002,1.41)
	Users	4359	228	5.23%					
Return to OR	Non-Users	4359	432	9.91%	0.48%	(-0.00759,0.01723)	0.4467	1.051	(0.924,1.195)
	Users	4359	411	9.43%					
Death	Non-Users	4359	128	2.94%	0.69%	(0.00021,0.01355)	0.0432	1.306	(1.007,1.693)
	Users	4359	98	2.25%					
Anesthesia-Induced Confusion	Non-Users	4360	112	2.57%	-1.10%	(-0.0183,-0.00372)	0.0031	0.7	(0.552,0.888)
	Users	4360	160	3.67%					
Early Bronchodilator Use	Non-Users	4360	382	8.76%	-0.76%	(-0.01966,0.00453)	0.2201	0.92	(0.806,1.051)
	Users	4360	415	9.52%					
Nausea	Non-Users	4360	175	4.01%	-1.35%	(-0.0224,-0.00466)	0.0028	0.748	(0.618,0.906)
	Users	4360	234	5.37%					
Aspiration	Non-Users	4360	34	0.84%	-0.31%	(-0.00739,0.00124)	0.162	0.731	(0.47,1.136)
	Users	4360	46	1.14%					
Hypotension	Non-Users	4360	155	4.52%	-1.28%	(-0.02329,-0.00232)	0.0167	0.779	(0.635,0.957)
	Users	4360	198	5.81%					
Urinary Retention	Non-Users	4360	157	3.60%	4.60%	(-0.00734,0.00826)	0.9082	1.013	(0.815,1.26)
	Users	4360	155	3.56%					
Blood Transfusion	Non-Users	4360	263	6.03%	-1.88%	(-0.02949,-0.00812)	0.0006	0.762	(0.653,0.89)
	Users	4360	345	7.91%					

Postoperative complications that occurred within 3 months of index surgery

Post-anesthesia complications that occurred within 1 week of index surgery

Conclusions

- Cannabis use disorder may be associated with a **small, but significant increase in risk of early complications** of complex reconstructive surgeries, but no significant differences in long-term chronic pain-related outcomes
- The effects of cannabis are **modest compared to those associated with nicotine use**
- While cannabis cessation prior to elective reconstructive surgeries may lead to small improvements in postoperative risk, **CUD should not be seen as a contraindication in appropriately selected patients**

Future Research

- Investigate factors, such as frequency of cannabis use, route of administration (smoking, vaping, edible), and duration of cannabis use
- Investigate potential effects of combined nicotine and cannabis use

References

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