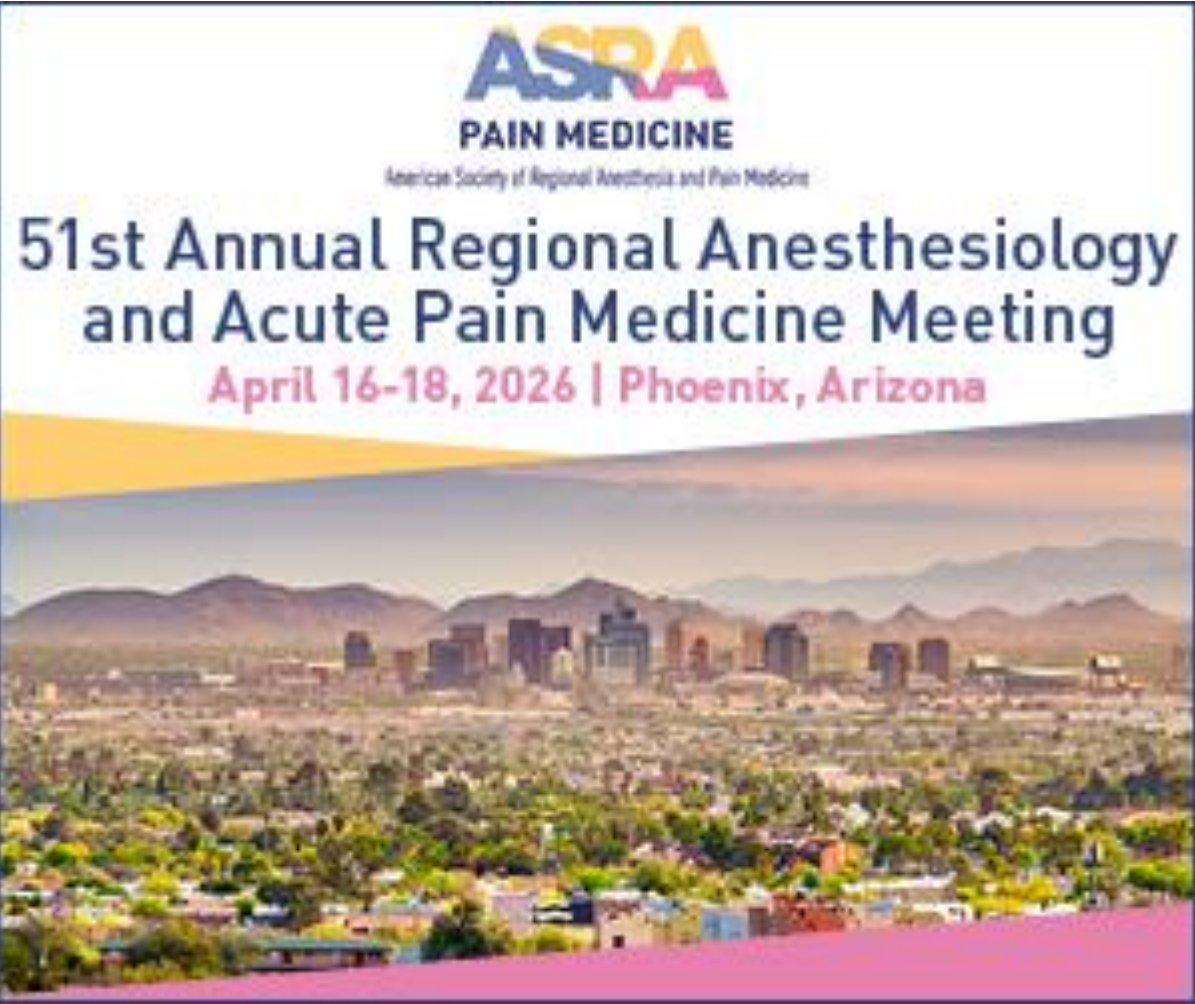


Association of Cannabis Use with Postoperative Opioid Consumption and Pain in Trauma Surgery

Retrospective Cohort Analysis

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INTRODUCTION

- Cannabis use is common in trauma patients
- Elective surgery studies suggest higher pain and opioid needs among cannabis users, but trauma evidence is limited
- We hypothesized that recent cannabis use is associated with higher opioid consumption and pain after trauma surgery

AIM

- **Primary:** 24h opioid consumption in MME
- **Secondary:** 24h time-weighted average pain score

METHODS

- **Design:** Retrospective cohort, 2020-2023
- **Population:** Adults ≥18 undergoing trauma surgery under GA with admission UDT. Exclude repeat operations ≤24 hours, cases without GA, cases shorter than 60 mins, positive for COVID-19
- **Exposure:** cannabis-positive vs cannabis-negative admission UDT
- **Analysis:** stabilized IPTW with regression modeling

Table 1. Characteristics of Covariates before and after IPTW

Characteristic	Baseline Characteristics			Post-IPTW Characteristics		
	Yes N = 1334	No N = 3101	ASD	Yes N = 1296	No N = 3104	ASD
Age, years	35 ± 14	50 ± 19	0.925	44 ± 17	46 ± 19	0.093
Female	314 (24%)	972 (31%)	0.176	348 (27%)	901 (29%)	0.048
ASA Classification, n (%)			0.199			0.013
2	386 (29%)	659 (21%)		308 (24%)	725 (23%)	
3	570 (43%)	1,533 (49%)		612 (47%)	1,478 (48%)	
4	285 (21%)	732 (24%)		299 (23%)	711 (23%)	
Injury Severity Score (ISS)	12 [3, 27]	11 [3, 25]	0.119	11 [3, 26]	11 [3, 26]	0.016
Cancer (any type)	18 (1.3%)	73 (2.4%)	0.075	27 (2.1%)	71 (2.3%)	0.017
Diabetes	89 (6.7%)	665 (21%)	0.435	215 (17%)	530 (17%)	0.013
Renal failure	25 (1.9%)	228 (7.4%)	0.263	46 (3.5%)	176 (5.7%)	0.103
Heart failure	36 (2.7%)	289 (9.3%)	0.281	98 (7.6%)	227 (7.3%)	0.011
Hypertension	360 (27%)	1,529 (49%)	0.472	529 (41%)	1,319 (42%)	0.035
Total number of surgeries	1 [1, 2]	1 [1, 2]	0.019	1 [1, 2]	1 [1, 2]	0.002

Table 2. Associations between Cannabis Use and Secondary (length of hospital stay and opioid consumption) and exploratory (pain score) outcomes, after IPTW

	Cannabis (+)	Cannabis (-)	Effect Estimate	p-value
Primary Analysis				
Opioid Consumption, MME	48 [20, 88]	31 [10, 69]	Geometric mean ratio (97.5% CI) 1.4 (1.2, 1.6)	<0.001
Secondary Analysis				
NRS Pain Score	4.21 [2.38, 5.87]	3.18 [1.34, 5.07]	Mean difference (95% CI) 0.48 (0.28, 0.67)	<0.001

RESULTS

- **Cohort:** 7,891 surgeries screened; 4,435 patients included; 30% cannabis-positive on admission UDT (1,334/4,435)
- Cannabis-positive patients were younger (mean age 35 ± 14), 24% female; IPTW reduced imbalance (ASD < 0.10) for nearly all covariates
- **Opioid Use:** Higher postoperative opioid consumption (median 48 [20-88] vs 31 [10-69] MME)
- **Postoperative Pain:** Higher average pain scores (4.21 vs 3.18)

CONCLUSIONS

- Cannabis-positive trauma surgery patients were associated with higher opioid consumption and had higher 24h pain scores
- Anticipate higher early analgesic requirements in cannabis-positive trauma patients
- These patients may benefit from proactive multimodal analgesia and closer reassessment during the first 24 postoperative hours