Cannabis Use and Buprenorphine Treatment Outcomes in People with Opioid Use Disorder

EINSTEIN Albert Einstein College of Medicine

Tiffany Lu, MD, MS; Frank Direnno, MSc; Marcus Bachhuber, MD, MSHP; Chengshu Zhang, PhD; Angela Giovanniello, PharmD; Chinazo Cunningham, MD MS

Montefiore THE UNIVERSITY HOSPITAL Division of General Internal Medicine

BACKGROUND

- Opioid use disorder (OUD) and opioid-related overdose deaths continue to soar in the U.S.
- **Buprenorphine** is an effective medication treatment for OUD, and can be delivered in diverse settings – longer **treatment retention** is associated with abstinence from illicit opioid use
- Polysubstance use often co-occurs with OUD and may portend poor buprenorphine treatment outcomes
- **Cannabis use** is common among people with OUD but evidence about cannabis use and buprenorphine treatment outcomes is limited and conflicting
- As cannabis use increases nationally, more research is needed to guide buprenorphine treatment for OUD with cannabis use

OBJECTIVE

- **To compare buprenorphine treatment retention in patients with OUD by cannabis use vs. non-use**
- We hypothesize that compared to non-use, patients with cannabis use would have worse treatment outcomes

METHODS

Design: Retrospective cohort study of patients who initiated buprenorphine treatment at a community health center in Bronx, NY from June 1, 2015 to December 31, 2017

Setting/Population: Urban community health center with ≥ 15 years of experience with buprenorphine treatment. Inclusion criteria: ≥ 18 years of age, OUD diagnosis by DSM-V criteria, **Cannabis or other substance use not exclusion criteria**. Prior to treatment initiation, **baseline urine drug test** and **self-reported substance use history** are collected on standardized intake form.

Data Collection: Data extracted from electronic health records

- Outcome Variable: **Buprenorphine treatment retention** = time (days) between initial & last active rx over a 6-month period without ≥ 60-day gap in consecutive rx
- Main Independent Variable: **Cannabis use (use/non-use)** = self-reported use in last 30 days OR positive urine drug test prior to treatment initiation
- Covariates: age, sex, race/ethnicity, insurance type, other non-opioid substance use

Analyses: **Survival analyses** with Kaplan-Meier estimates and Cox proportional hazard regression (adjusted for covariates with p<0.25 in univariate analyses)

Cannabis use is **not** associated with worse buprenorphine treatment retention in patients with opioid use disorder who initiated treatment at an urban community health center.

RESULTS

Table 1: Baseline Characteristics among Patients who Initiated Buprenorphine Treatment 2015-2017 (N=239)

	Overall (N=239) N (%)	Cannabis Use (n=87) n (%)	Cannabis Non-Use (n=152) n (%)	P-value
Demographic characteristics				
Age (years), mean ± SD	48.4 ± 11.1	45.8 ± 11.8	49.7 ± 10.5	<0.01*
Female gender	47 (19.7)	14 (16.1)	33 (21.7)	0.29
Race/ethnicity				
Hispanic	172 (71.4)	63 (72.4)	108 (71.1)	0.13
Non-Hispanic Black	41 (17.0)	13 (14.9)	28 (18.4)	
Non-Hispanic White	18 (7.5)	10 (11.5)	8 (5.3)	
Other/unknown	10 (4.5)	1 (1.2)	8 (5.3)	
Health insurance				
Public[a]	176 (73.6)	69 (79.3)	107 (70.4)	0.26
Private/commercial	29 (12.1)	7 (8.1)	22 (14.5)	
None	34 (14.2)	11 (12.6)	23 (15.1)	
Non-opioid substance use characteristics				
Alcohol use[b]	64 (35.8)	31 (41.9)	33 (31.4)	0.15
Benzodiazepines use	43 (18.0)	28 (32.2)	15 (9.9)	<0.01*
Cocaine use	69 (28.9)	31 (35.6)	38 (25.0)	0.08

* Statistically significant baseline characteristic (p<0.05) compared by cannabis use, using Chi square test for categorical variables and 2-sample T-test for continuous variables
[a] Public insurance: Medicaid, Medicare, dual Medicaid/Medicare
[b] Missing data for alcohol use: total patients (N=179); cannabis use (n=74), non-use (n=105)

CORRESPONDING AUTHOR

Tiffany Lu, MD, MS; TLu@montefiore.org

Figure 1: Kaplan-Meier Estimates of Buprenorphine Treatment Retention by Cannabis Use

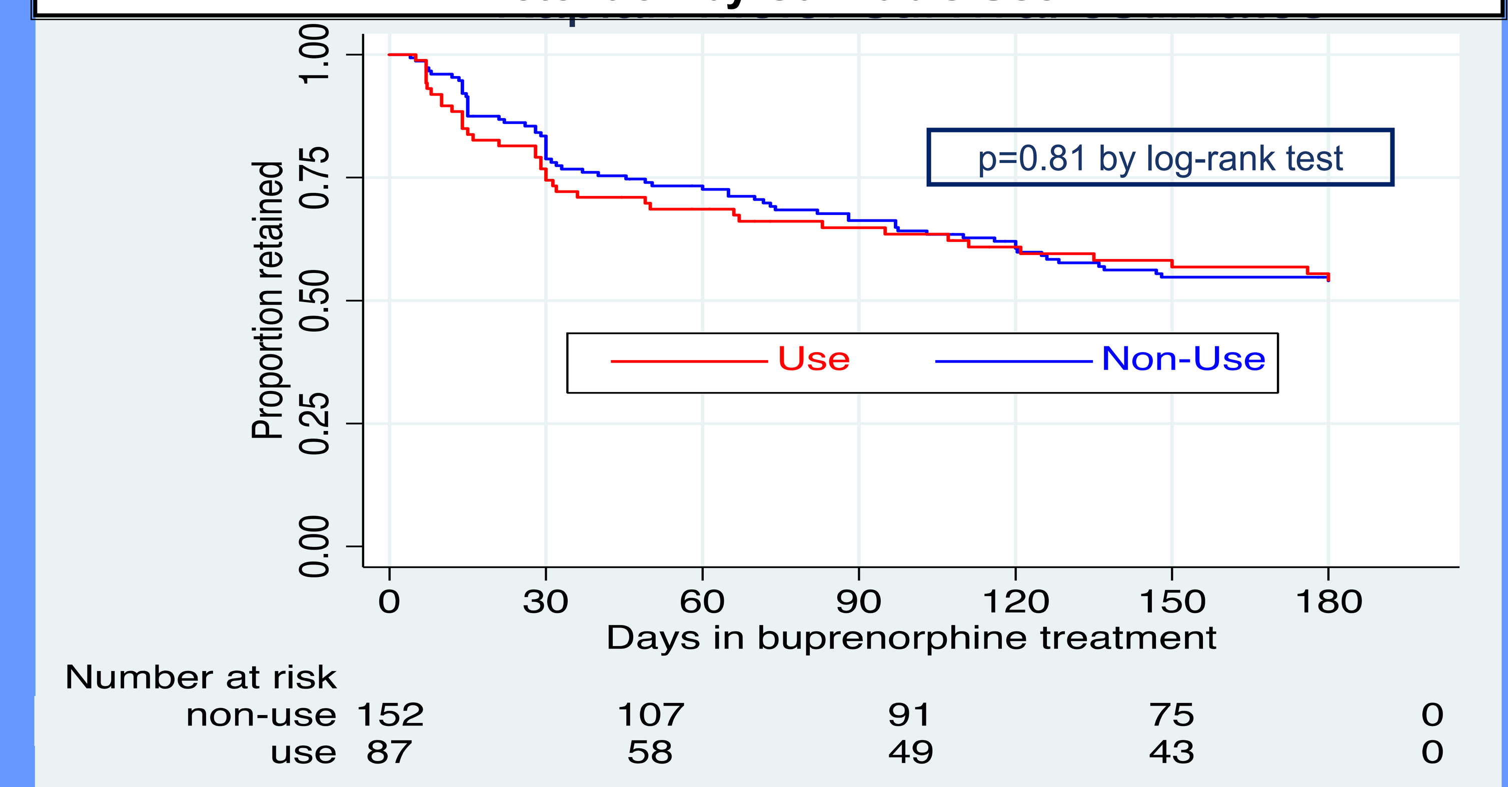

Table 2: Cox Proportional Hazards Analyses of Cannabis Use Association with Buprenorphine Treatment Retention

Baseline Characteristics	Reference Group	Unadjusted HR (95% CI)	Adjusted HR (95% CI)
Cannabis use	Non-use	1.05 (0.71-1.56)	0.80 (0.52-1.23)
Age (cont)	---	0.99 (0.97-1.00)	0.99 (0.97-1.01)
Female sex	Male sex	0.78 (0.46-1.31)	--
Hispanic	Non-Hispanic	0.78 (0.52-1.18)	0.88 (0.58-1.34)
Public insurance	Private insurance	1.11 (0.71-1.75)	--
Benzo use	Non-use	2.35 (1.52-3.63)	2.40 (1.49-3.87)*
Cocaine use	Non-use	1.14 (0.76-1.73)	--

LIMITATIONS

- Single site with years of experience may not be generalizable to other buprenorphine treatment programs
- Mental health conditions not included in analyses - concurrent benzo use is associated w/ longer treatment retention, so cannabis use may be for mood symptoms

CONCLUSIONS

- Cannabis use was not associated with worse buprenorphine treatment retention in patients with OUD
- Findings support treatment practices that do not exclude patients with cannabis use from buprenorphine treatment
- As cannabis laws and use change, more studies needed to examine cannabis use and OUD treatment outcomes

ACKNOWLEDGEMENTS

National Institute of Drug Abuse (NIDA) (K24DA036955), National Center for Advancing Translational Science (NCATS) Einstein/Montefiore CTSA (UL1 TR001073), New York Empire Clinical Research Investigator Program, NIDA-SGIM Training Award in Substance Use Disorder Treatment Science Dissemination