

Cannabis Use and Impact in Chronic Myeloid Leukemia-Related Hospitalizations: A Nationwide Analysis.

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INTRODUCTION

- Cannabis use is rising among patients with cancer. In vitro data suggest cannabinoids may have antiproliferative effects in CML cell lines, but cannabis use has also been linked to thrombotic complications.
- In-hospital data on cannabis use specifically among patients with CML remain limited.

AIM

To evaluate the impact of the use of cannabis on hospital outcomes among CML-related admissions.

METHOD

- Retrospective analysis of the National Inpatient Sample (2016–2023) of CML-related hospitalizations, with vs. without documented cannabis use.
- Primary outcome: in-hospital mortality. Secondary outcomes: cardiovascular complications and discharge disposition.
- Multivariable logistic regression adjusted for demographics, hospital factors, income, insurance, and comorbidities.
- Propensity score matching (PSM) was performed.

CONCLUSIONS

- Cannabis use was documented in a small, distinct subgroup of CML hospitalizations — younger, more often male, of lower socioeconomic status, and with higher rates of concurrent tobacco and alcohol use.
- It was associated with higher hospitalization costs and numerically higher rates of bleeding and myocardial infarction, though these associations did not reach statistical significance.

RESULTS

❖ Our cohort included **173,095** hospitalized patients with CML, of whom **2,295 (1.33%)** had documented cannabis use.

❖ **Cannabis use was more prevalent** among male patients (71.2% vs 55.3%; $P < 0.001$), patients aged 30–49 years (44.6% vs 14.13%; $P < 0.001$), those with median household income below US\$57488 (40.31% vs 27.5%; $P < 0.001$), and Medicaid insurance (41.3% vs 11%; $P < 0.001$).

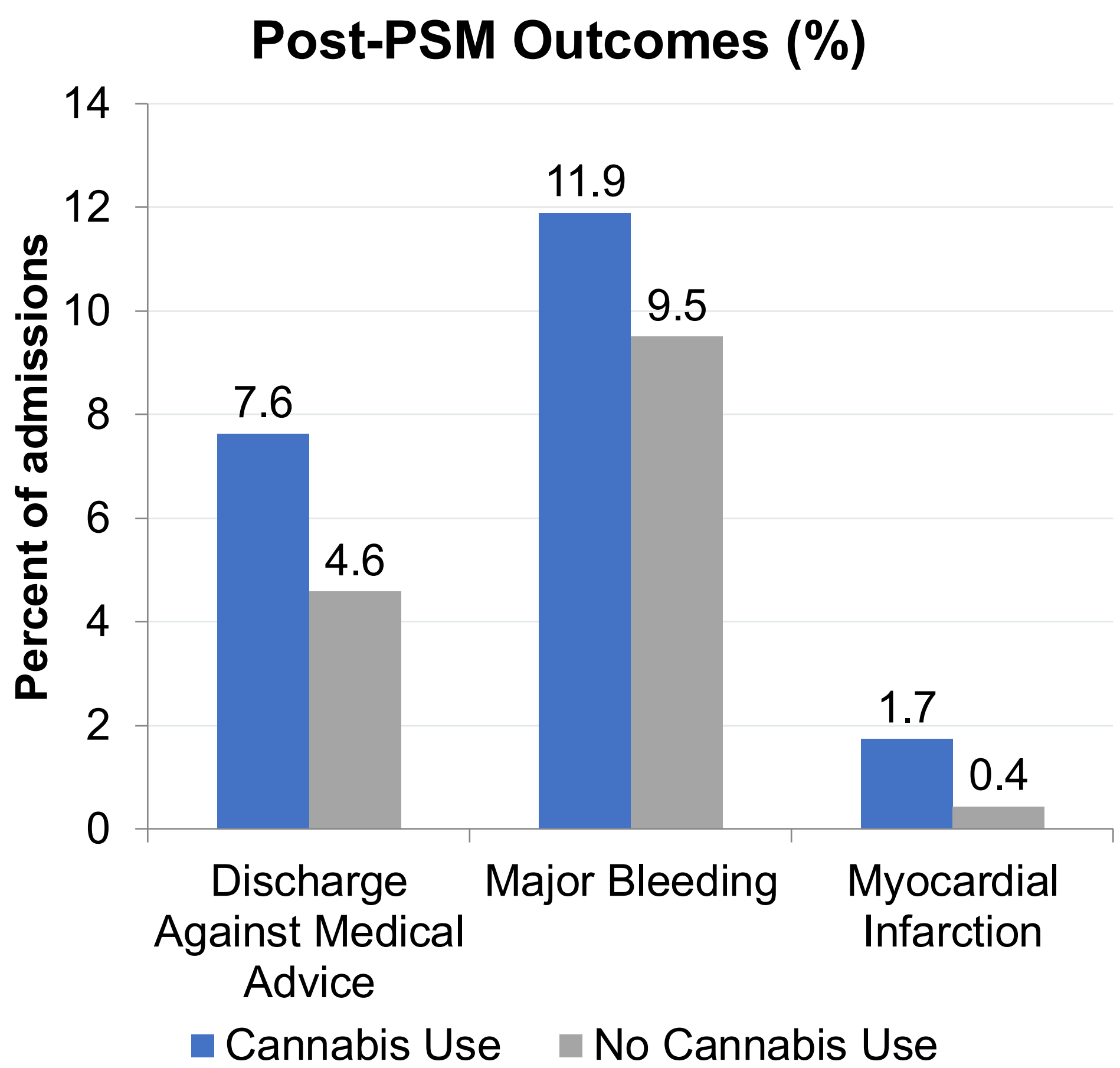
❖ After PSM, discharge against medical advice remained higher (7.63% vs 4.58%; $P = 0.241$) in cannabis users.

❖ Cost was US\$8800 higher in that group, although not statistically significant.

Table 1. Demographic & Socioeconomic Characteristics

Characteristic	Cannabis Use	No Cannabis Use
Male sex	71.2%	55.3%
Age 30–49 years	44.6%	14.13%
Income < \$57,488	40.31%	27.5%
Medicaid insurance	41.3%	11.0%
Current smoking	61.0%	35.1%
Depression	25.2%	15.1%
Alcohol use	13.2%	2.7%
Hypertension	42.9%	69.3%
Diabetes	21.5%	33.6%
Coronary artery disease	8.5%	28.6%

All comparisons $P < 0.001$ (unadjusted)



None of these differences reached statistical significance: AMA discharge $P = 0.241$; bleeding aOR 1.27 (95% CI 0.83–1.94), $P = 0.270$; MI aOR 4.37 (95% CI 0.89–21.43), $P = 0.069$.

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REFERENCES

1- Chang G, Meadows ME, Jones JA, Antin JH, Orav EJ. Substance use and survival after treatment for chronic myelogenous leukemia (CML) or myelodysplastic syndrome (MDS). Am J Drug Alcohol Abuse. 2010 Jan;36(1):1-6. doi: 10.3109/00952990903490758. PMID: 20141389; PMCID: PMC2847847.

2- Salcin H, Goker Bagca B, Alcitepe I, Biray Avci C, Aslan R, Annette Akgur S, Tezcanli Kaymaz B. Investigating the Effects of a Synthetic Cannabinoid on the Pathogenesis of Leukemia and Leukemic Stem Cells: A New Therapeutic Approach. Cannabis Cannabinoid Res. 2024 Feb;9(1):212-222. doi: 10.1089/can.2021.0180. Epub 2022 Jul 14. PMID: 35834597.