Burden of arrhythmia in hospitalized patients with cannabis use related disorders: analysis of 2016-2018 national inpatient sample

Thyagaturu H.[1]; Thangjui S.[1]; Shrestha B.[1]; Shah K.[2]; Naik R.[1]; Bondi G.[1]

[1]Bassett Healthcare, Cooperstown, United States of America
[2]St. Lukes University Hospital, Internal Medicine, Bethlehem, United States of America

Introduction: Cannabis is being more widely use as a recreational substance worldwide. There have been case reports and systematic review describing the association of cannabis use and cardiac arrhythmia (1).

Purpose: We sought out to measure the prevalence of different types of cardiac arrhythmia in hospitalizations associated with cannabis use disorder.

Methods: We queried January 2016 to December 2018 National Inpatient Sample (NIS) databases to identify adult (≥18 yrs) hospitalizations in the US with a diagnosis of cannabis use related disorders. Patients with an associated diagnosis of arrhythmias were also identified based on appropriate ICD-10 CM codes. We used the Chi-square test to evaluate the differences between binary or categorical variables, and Student's t-test for continuous variables. Multivariate logistic regression was used in outcomes analysis to adjust for potential hospital and patient-level confounders (age, sex, race, diabetes, heart failure, chronic kidney disease, anemia, obesity, elixhauser co-morbidity index, hospital location, teaching status, bed size, income status and others). The discharge weights provided in the databases were used to calculate the national estimates. STATA 16.1 software was used to perform all statistical analysis.

Results: We identified 2,457,544 hospitalizations associated with cannabis use related disorders across three years. Of which, 187,825 (7.6%) were associated with any arrhythmia. We found that atrial fibrillation was the most associated arrhythmia. The complete list of types of arrhythmia and their prevalence are described in Figure-1. Patients with arrhythmia group were older (mean age 50.5 vs 38.3 yrs; $P < 0.01$) and had higher co-morbidity (% of >3 Elixhauser comorbidity score 94.1% vs 60.6%; $P < 0.01$). After adjusting for patient and hospital-level confounders, we observed arrhythmia group was associated with higher odds of in-hospital mortality compared to the group without arrhythmia [Odds Ratio (OR): 4.5 (4.09 – 5.00); $P < 0.01$]. We also observed statistically significant increase in hospitalization length of stay due to the status of any arrhythmia [5.7 vs 5.1 days; $P < 0.01$].

Conclusion: The prevalence of Afib is high in hospitalizations associated with cannabis use. Hospitalizations associated with cannabis use disorder and any arrhythmia are associated with higher in-hospital mortality and LOS. Therefore, all electrocardiograms should be scrutinized in hospitalized cannabis users. However, further prospective studies are necessary to endorse our study results.

Abstract Figure.

Prevalence of arrhythmias in hospitalizations associated with cannabis use disorder