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Medication overuse headache in patients with chronic migraine using cannabis: A case-referent study

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PMID: 34370866   DOI: 10.1111/head.14195

Abstract

Objective: To examine whether cannabis use predicts medication overuse headache (MOH) in patients with chronic migraine (CM).

Methods: Electronic chart review was conducted by combining the terms "CM," "medication overuse," "cannabis," "cannabidiol," and "tetrahydrocannabinol" for patients seen at our headache clinics from 2015 to 2019. Of 729 charts consecutively screened, 368 met our inclusion criteria, that is, adult patients with CM with ≥1-year CM duration. The following variables were extracted from the included patient charts: MOH diagnosis, age, sex, migraine frequency, current CM duration, current cannabis use duration, overused acute migraine medications, current MOH duration, and types of cannabis products used. Logistic regression was used to identify variables predicting MOH while controlling for remaining predictors. Agglomerative hierarchical clustering (AHC) was conducted to explore natural clusters using all predictor variables.

Results: There were 212 patients with CM and MOH (cases; median age 43 years, interquartile range [IQR] 33-54; 177 [83%] females) and 156 patients with CM without MOH (referents; median age 40 years, IQR 31-49; 130 [83%] females). MOH was present in 81% (122/150) of current cannabis users compared with 41% (90/218) in those without cannabis use-adjusted odds ratio 6.3 (95% CI: 3.56 to 11.1, p < 0.0001). Current cannabis use was significantly associated with opioid use (Spearman's rho 0.26, p < 0.0001). Both current cannabis use (rho 0.40, p < 0.0001) and opioid use (rho 0.36, p < 0.0001) were significantly associated with MOH. Similarly, AHC revealed two major natural clusters. Cluster I patients featured 9.3 times higher current cannabis use, 9.2 times higher current opioid use, and 1.8 times higher MOH burden than those in Cluster II (p < 0.0001).

Conclusion: Cannabis use was significantly associated with increased prevalence of MOH in CM. Bidirectional cannabis-opioid association was observed-use of one was associated with use of the other. Advising patients with CM and MOH to reduce cannabis use may help treat MOH effectively.

Keywords: cannabis; case-referent study; chronic migraine; medication overuse headache; migraine.

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