

SUPPLEMENTAL MATERIAL: Associations Between Monthly Cannabis Use and Myocardial Infarction in Middle-aged Adults: NHANES 2009 to 2018, Corroon, et al.

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SUPPLEMENTARY METHODS

Covariates

Covariates included sociodemographic factors such as age, sex, race/ethnicity, education and household income. Health-related covariates included physical activity, body mass index (BMI), cigarette smoking status, and alcohol use. Covariates were obtained through self-report except for BMI, which was based on height and weight and blood pressure; both as measured by trained examiners. Biomarkers (i.e., total cholesterol (mg/dl), HDL cholesterol (mg/dL), fasting blood glucose (mg/d), HbA1c (%)) were objectively measured by American Society of Clinical Pathologists-certified medical technologists or medical laboratory technicians at the University of Minnesota, Minneapolis, MN.

Cigarette use was self-reported using the Smoking - Cigarette Use Questionnaire, which surveys respondents 12 years of age and over. Cigarette smoking status was determined by the following questions: “Have you smoked at least 100 cigarettes in your entire life?” (Yes, No) and “Do you now smoke cigarettes?” (Every day, Some days, Not at all). Respondents reporting that they had not smoked at least 100 cigarettes in their entire life were categorized as “Never” smokers. Those reporting smoking at least 100 cigarettes in their entire life and denying current smoking were categorized as “Former” smokers. Those reporting smoking at least 100 cigarettes in their entire life and current smoking were categorized as “Current” smokers.

Cigarette pack-years were estimated using duration and frequency measures. For current smokers, pack-years were determined by the following questions: “How old (were you/was SP) when (you/s/he) first started to smoke cigarettes fairly regularly?” and “During the past 30 days, on the days that (you/SP) smoked, about how many cigarettes did (you/s/he) smoke per day?” For former smokers, pack-years were determined by the following questions: “How long has it been since (you/SP) quit smoking cigarettes?” and “At that time, about how many cigarettes did (you/SP) usually smoke per day?” One pack-year of exposure was equivalent to 7300 cigarettes (1 year × 365 days/years × 1 pack/day × 20 cigarettes/pack) as defined in previous research.¹

Alcohol use was defined by using questions from the Alcohol Use Questionnaire, which surveys respondents 18 years of age and over. A single variable for alcohol use was determined using two different approaches due to changes in alcohol use variables in the 2017-2018 survey cycle. From 2009-2016, alcohol use was determined by the following questions: “In your entire life, have you had at least 12 drinks of any type of alcoholic beverage?” (Yes, No) and “In the past 12 months, how often did you drink any type of alcoholic beverage? PROBE: How many days per week, per month, or per year did you drink?” (Range of Values, Units: Week, Month, Year). Respondents reporting never having at least 12 drinks in their entire life were categorized as “Never” alcohol users. Respondents reporting having at least 12 drinks in their entire lifetime and reporting no alcohol consumption in the past year were categorized as “Past” alcohol users. Respondents reporting having at least 12 drinks in their entire lifetime and reporting any alcohol consumption in the past year were categorized as “Current” alcohol users.

For the 2017-2018 survey cycle, alcohol use was determined by the following questions: “In your entire life, have you had at least 1 drink of any kind of alcohol, not counting small tastes or sips?” (Yes, No) and “During the past 12 months, about how often did you drink any type of alcoholic beverage? PROBE: How many days per week, per month, or per year did you drink?”

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(Never in the last year, Every day, Nearly every day, 3 to 4 times a week, 2 times a week, Once a week, 2 to 3 times a month, Once a month, 7 to 11 times in the last year, 3 to 6 times in the last year, 1 to 2 times in the last year). Respondents reporting never having at least 1 drink in their entire life were categorized as “Never” users. Respondents reporting never drinking in the past 12 months were categorized as “Past” users and respondents reporting any alcohol use in the past 12 months were categorized as “Current” users.

A second alcohol use variable was created to measure frequency of use. Alcohol frequency was defined by the average number of days per week participants drank and was assessed using the following questions: “In your entire life, have you had at least 12 drinks of any type of alcoholic beverage?” (Yes, No); “In the past 12 months, how often did you drink any type of alcoholic beverage? How many days per week, per month, or per year did you drink?” (Responses recorded from 0–365). Responses were converted to days per week as applicable.

Respondents reporting never having at least 12 drinks in their entire life or reporting a frequency of drinking in the past 12 months of 0 days per week were classified with a frequency of “No days/week”. Respondents reporting ever having at least 12 drinks in their entire life and a frequency of drinking in the past 12 months of 0 to 2 days were categorized with a frequency of “≤ 2 days/week”. Those reporting a frequency of greater than 2 days were categorized with a frequency of “> days/week”.

Physical activity was collected using the Physical Activity questionnaire. It was self-reported as recreational activities and/or transportation (i.e., walk/bike walk to get to and from places) using a modified Global Physical Activity Questionnaire (GPAQ). Each form of activity was differentiated by level of intensity (i.e., moderate or vigorous), where applicable. Light activities (e.g., leisure reading, sitting work) were not included in the questionnaire.

References

1. MJ P, E V, R K, J R, M S, S S, F L, S K. Association between marijuana exposure and pulmonary function over 20 years. *Jama* 2012;307.

SUPPLEMENTARY RESULTS

Table 4 (Supplemental). Adjusted Odds Ratios for MI by Cannabis Use Status, Stratified by Select Characteristics, (2009-2018)

Cannabis Exposure	Never	No History of Monthly Use	History of Monthly Use	p for Interaction
Sex				0.931
Male	1.00 Ref.	0.62 (0.20-1.90)	1.13 (0.45-2.83)	
Female	1.00 Ref.	0.48 (0.12-1.99)	1.25 (0.35-4.39)	
Race/Ethnicity				0.355
Non-Hisp. White	1.00 Ref.	0.44 (0.11-1.74)	1.35 (0.46-3.95)	
Non-Hisp. Black, Asian & other	1.00 Ref.	0.51 (0.13-2.05)	0.57 (0.18-1.84)	
Hispanic	1.00 Ref.	1.96 (0.60-6.43)	1.28 (0.22-7.46)	
Cigarette smoking status				0.127
Never	1.00 Ref.	0.93 (0.24-3.56)	0.67 (0.15-2.95)	
Former	1.00 Ref.	1.05 (0.22-5.07)	1.90 (0.40-9.00)	
Current	1.00 Ref.	0.09 (0.02-0.52)*	0.28 (0.07-1.06)	
Age of first use				0.299
< 18 YOA	NA	1.00 Ref.	0.30 (0.09-1.03)	
≥ 18 YOA	NA	1.00 Ref.	0.65 (0.19-2.25)	
Recency of use				0.026*
Past month	NA	1.00 Ref.	0.36 (0.07-1.89)	
> Past month	NA	1.00 Ref.	2.98 (1.08-8.24)*	

Notes: Odds ratios and 95% CI for reporting a prior MI. Interaction p value calculated w/ one interaction term in the full model at a time (Full model variables: age, sex, race/ethnicity, education & household income, cigarette smoking, alcohol use, physical activity, BMI, ASCVD risk score). * Statistically significant.