

Prevalence and demographics of marijuana users in a Lung Cancer Screening cohort

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INTRODUCTION

Marijuana is the most widely used illicit drug in the world. While marijuana use is generally associated with young adults and adolescents, the prevalence of marijuana use in older populations is on the rise [1]. Although marijuana smoking has been shown to cause basal and goblet cell hyperplasia, inflammation, and squamous metaplasia in tracheobronchial mucosa [2], there is no conclusive evidence for an increased risk of lung cancer amongst long term marijuana smokers. However, the quality of data is limited by small sample sizes

Current risk assessment criteria for inclusion in Lung Cancer Screening (LCS) programmes are based on a cigarette smoking history and do not consider marijuana use, meaning that marijuana smokers without significant cigarette smoking histories may be excluded. Here, we assess the proportion of participants in a large LCS study who reported a history of regular marijuana use and assess demographic characteristics of these participants compared to the rest of the study cohort.

METHODS

The SUMMIT Study [NCT03934866] is a prospective observational cohort study which aims to assess the implementation of Low Dose Computed Tomography (LDCT) scanning for LCS in a high-risk population in North-East and Central London and validate a multi-cancer early detection blood test.

55-77 year old individuals recorded as smokers within the past 20 years were identified from primary care and invited to attend a Lung Health Check (LHC) consultation where questions were asked to assess their lung cancer risk and therefore eligibility for Low Dose CT (LDCT) screening through participation in the SUMMIT Study. Individuals meeting either the 2013 United States Preventive Services Task Force (USPSTF) LDCT screening criteria or having a $\geq 1.3\%$ risk of developing lung cancer over the next six years based on the Prostate, Lung, Colorectal and Ovarian (PLCOm2012) risk score were eligible for participation. At this appointment, attendees were also asked if they had ever smoked products other than cigarettes, including marijuana.

While the definition of an ever cigarette smoker is generally accepted as someone who has smoked ≥ 100 cigarettes per lifetime, any cohort analysis of marijuana users is complicated by a lack of clear consensus on the definition of regular marijuana use. In practice, this often refers to at least weekly use over a period of months to years. Therefore, we defined a history of regular marijuana use as having ever smoked marijuana at least once a week for at least one year. This included both former and current marijuana smokers.

RESULTS

13,035 individuals participated in the study. 16.4% (n=2,135) reported having ever smoked marijuana. 6.3% (n=824) reported having ever smoked marijuana regularly, 4.3% (n=559) had smoked marijuana regularly into their 50's and 2.7% (n=357) were current, regular marijuana smokers at the time of the LHC.

Participants with a history of regular marijuana use were younger (mean age 63.15 years vs. 65.54 years, $p < 0.001$) and proportionally more were male (74.4% male vs. 56.3% male, $p < 0.001$) compared to the rest of the study cohort (Table 1).

Proportionally more participants with a history of regular marijuana use were current cigarette smokers compared to the rest of the cohort (57.2% vs. 48.4%, $p < 0.001$). There was no significant difference in mean pack year history between the two groups (44.9 years vs. 45.3 years; $p = 0.617$). 85.1% of current, regular marijuana users were also current cigarette smokers.

Finally, more participants with a history of regular marijuana use had completed a higher education degree (Bachelors or equivalent, Masters or PhD) and fewer finished school at or before 15 compared to the rest of the cohort (Higher education degree: 24.1% v 16.7%, $p < 0.001$; Finished school at or before 15: 34.2% vs. 40.2%, $p < 0.001$).

	Current or former regular marijuana users (n=824)	No regular marijuana use (n=12,211)	p-value
Mean age	63.15 (SD = 5.403)	65.54 (SD = 6.119)	<0.001
Gender			
Male	613 (74.4%)	6878 (56.3%)	<0.001
Female	211 (25.6%)	5333 (43.7%)	
Smoking status			
Current	471 (57.2%)	5,905 (48.4%)	<0.001
Ex	353 (42.8%)	6,306 (51.6%)	
Highest level of education			
Completed further degree (Masters or PhD)	63 (7.6%)	579 (4.7%)	<0.001
Completed Bachelors degree or equivalent	136 (16.5%)	1,458 (11.9%)	<0.001
Completed further education but not degree	73 (8.9%)	1,026 (8.4%)	0.648
Completed A-levels or equivalent	80 (9.7%)	1,320 (10.8%)	0.323
Completed O-levels or equivalent	190 (23.1%)	2,916 (23.9%)	0.592
Finished school at or before fifteen	282 (34.2%)	4,912 (40.2%)	<0.001

CONCLUSION

6.3% of SUMMIT Study participants reported a regular marijuana smoking history. They were more likely to be males, current cigarette smokers and have higher education degrees compared to participants with no regular marijuana smoking history.

Further research will determine the independent impact of marijuana smoking on lung cancer risk.

References:

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