Smoking Cigarettes, but Not Pot, Linked to Increased Heart Disease

The more someone smoked, the more likely they were to be diagnosed with heart problems.

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It may be that all smoking isn't bad for you in the same way. According to an analysis published in EClinical Medicine, smoking cigarettes is far more likely to lead to heart disease than smoking marijuana.

The analysis conducted by David Lorenz, PhD, a research scientist at the Dana-Farber Cancer Institute in Boston, and colleagues adds to the already overwhelming data showing that smoking tobacco—a practice more prevalent among people with HIV—is associated with shorter life spans and worse HIV outcomes.

This analysis culled data from ongoing trials, including the Multicenter AIDS Cohort Study, the National NeuroAIDS Tissue Consortium and the HIV Neurobehavioral Research Center study. It included 245 people at least 40 years old who were followed between 2016 and 2018.

The participants were mostly male (78%) and white (54%), and the median age was 53. Three out of four were living with HIV, and most had an undetectable viral load (measured as below 200).

Overall, 62% of participants smoked marijuana, cigarettes or both. At the beginning of the analysis period, 18% only smoked marijuana, 20% smoked both marijuana and cigarettes and 24% reported only smoking cigarettes. Cigarette smokers, regardless of pot use, smoked a median of three quarters of a pack a day and had been smoking for a mean of 26 years. Pot smokers had been smoking for less time, a median of 15 years. And people who smoked both were more likely to be living with HIV and to be heavy drinkers and cocaine users as well.

The researchers used samples of blood and urine to determine which toxic chemicals circulated in the participants' bodies and whether there was a difference in toxins based on what they smoked.

It turned out there was. Aside from the expected markers of nicotine metabolites in cigarette smokers (with and without pot smoking) and THC metabolites in exclusive pot smokers, there were chemicals all smokers had in common. These included polycyclic aromatic hydrocarbons and volatile organic compounds, which are the result of inhaling any kind of smoke. But even then, those biomarkers were higher in cigarette smokers than pot smokers.

Where they differed was in levels of the acrolein metabolite 3-HPMA, a toxin that results from combustion. It's also present in charred and fried foods, but its primary source is cigarette smoking. This analysis found that pot smokers were more like nonsmokers when it came to concentrations of 3-HPMA. But cigarette smokers had double the rate of the toxin in their blood and urine. Metabolites of other toxins like acrolein, acrylamide and acrylonitrile were also significantly higher in cigarette smokers than nonsmokers. And while pot smokers had detectable levels of those metabolites, they were lower.

However, marijuana smokers—especially those who appeared to smoke more pot, judging by the levels of THC in their blood and urine—did see a clustering of toxins, including o-cresol sulfate and 2-ethylphenylsulfate, in their body.

Whether the presence of these toxins means anything for health is another question, one the researchers addressed by looking at diagnoses of cardiovascular disease among people in the analysis. What they found was that tobacco-specific toxins—but not pot-specific ones—were associated with heart disease. Specifically, it's the 3-HPMA biomarker. Even when researchers adjusted the analysis to remove the effect of hypertension, high cholesterol and diabetes, cigarette smokers were still three times more likely to be diagnosed with heart disease than nonsmokers.

And the finding was dose-dependent, meaning that the more someone smoked cigarettes, the more likely they were to be diagnosed with heart disease.

Researchers found a similar pattern with levels of non-THC-related toxins resulting from pot smoking. But when they adjusted the analysis for traditional heart disease factors, the association disappeared.

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