

Cannabis and Lung Cancer: A Link Stronger Than It Appears

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The toxicity of cannabis, particularly its potential link to lung cancer, has long been underestimated. However, recent studies are challenging this “false innocence,” identifying a growing population of younger patients with high cannabis consumption who are presenting with aggressive cancers.

Pauline Pradère, MD, pulmonologist at Marie Lannelongue Hospital in Paris, France, and a leading researcher on this topic, discussed the effects of cannabis on lung health during this year’s ALBATROS International Addictology Congress.

Inhaled Cannabis Use

“France holds the unfortunate distinction of being the leading cannabis consumer in Europe,” said Pradère. In 2019, it was estimated that by the time they turned 17, 1 in 5 French individuals had consumed cannabis at least once in the past month. Most of this consumption is through inhalation of cannabis resin joints, often mixed with tobacco. Given the high prevalence, it is crucial to understand the potential impact of cannabis on respiratory health.

While many studies focus on the neuropsychological effects of cannabis, Pradère emphasized that its inhalation, which introduces the substance directly into the lungs, may have significant pulmonary effects — effects that remain under-researched, particularly regarding lung cancer risk.

Cannabis and Lung Cancer

Pradère referenced a well-known study published in [Chest in 2018](#), which suggested that smoking cannabis does not cause emphysema or impair inspiratory function. Although biopsies of cannabis smokers showed precancerous lesions, the study did not strongly connect these findings to lung cancer.

Another 2018 [meta-analysis](#), often cited to “clear” cannabis consumption of lung cancer risk, concluded that there were insufficient data to draw definitive conclusions. Pradère criticized this study for not specifically examining cannabis use and its unique effects. While evidence links cannabis consumption to an increased risk for testicular tumors, the connection to lung cancer remains unclear.

A recent review published in [The New England Journal of Medicine](#) also examines the chronic effects of cannabis, focusing primarily on its neuropsychiatric impact. However, the review makes no mention of its effects on the lungs, noted the pulmonologist. Additionally, there are other studies that highlight the potential therapeutic properties of cannabis in cancer care, such as managing cancer-related symptoms, treatment-associated pain, and even its possible antitumor effects. One such article, provocatively titled [Can Cannabis Cure Cancer?](#), further fuels the debate surrounding cannabis’ medical use.

Stronger Evidence for Harmful Effects

Despite the conflicting data, several factors suggest a harmful role of chronic cannabis inhalation in lung health. The first is a toxicologic argument. “Even without considering the resin and tobacco association, significant carcinogens are found in joints,” explained Pradère.

The second argument, recognized by those with asthma, is that tetrahydrocannabinol, the psychoactive component of cannabis, has a bronchodilatory effect, likely leading to deeper inhalation of carcinogens than with tobacco smoking.

[Histologic studies](#) have shown that cannabis smokers develop precancerous lesions similar to those found in tobacco smokers. These findings further suggest a possible link between cannabis use and lung cancer.

Epidemiologic Data

While research remains limited, Pradère highlighted epidemiologic studies that suggest cannabis use is a risk factor for lung cancer. A [Canadian study](#), for example, showed that cannabis use reported at the age of 20 years significantly affected the later development of lung cancer. Adolescents who smoked more than 50 joints during their teenage years were found to have more than double the risk of developing bronchial carcinoma.

Why the Discrepancy?

To explain the reassuring findings in some meta-analyses, Pradère pointed to challenges in studying the link between chronic cannabis use and lung cancer. She noted that many cannabis users also smoke tobacco, and in France, the illegal status of cannabis leads to the addition of other substances to cannabis resin, further complicating research.

Additionally, a significant underreporting of cannabis use by patients contributes to these gaps in data, especially when clinicians fail to directly ask about cannabis use. This underreporting is one of the reasons Pradère pursued her research in this area.

Pradère works at a center specializing in lung cancer surgery, where she has observed a high prevalence of cannabis use among patients. Over 3 years, she studied patients younger

than 50 years who had undergone lung cancer surgery at three major hospitals in the Île-de-France region. She then followed up with these patients post-surgery to gather more information about their cannabis consumption.

Study on 75 Patients Younger Than 50 Years

“We contacted 75 patients who had undergone surgery for lung cancer over 3 years, and none of them refused to participate,” Pradère explained. “We found that 43% of our young patients were chronic cannabis users.”

On average, these patients smoked 150 joints per month, and for 61% of them, no healthcare provider had ever asked about their cannabis use. “They had seen general practitioners, anesthesiologists, surgeons, and pulmonologists, but no one had ever asked,” she added.

When comparing the three patient groups — those who smoked both cannabis and tobacco, those who smoked only tobacco, and nonsmokers — the results showed that the cannabis-smoking group, which represented a significant proportion, was predominantly men. Their tobacco consumption was similar to those who smoked only tobacco. However, they presented with more emphysema and poor prognosis carcinomas, such as poorly differentiated large cell carcinomas.

“The tumors were more often located in the upper lobes, where the majority of inhaled toxins concentrate. Additionally, their surgery durations and hospital stays were longer, likely due to underlying lung damage,” Pradère pointed out.

Prospective Study of 150 Patients

Building on her earlier work, Pradère led a multicenter prospective study, supported by the French National Cancer

Institute, which included 150 patients younger than 60 years diagnosed with primary lung cancer.

“We collaborated with the Toxicology Department, led by Jean-Claude Alvarez, MD, PhD, at Garches University Hospital, where we conducted toxicological analyses on patients’ hair and administered anonymous self-report questionnaires outside the medical office,” Pradère explained. The study aimed to evaluate both the prevalence of cannabis consumption among these patients and whether the lung cancer of cannabis smokers differed from that of tobacco smokers.

Though the manuscript is still under review, Pradère shared some preliminary findings. “We observed a high prevalence of cannabis use in this group of young patients with highly lethal lung cancer. 38% were cannabis smokers, with an average consumption of four joints per day over a median period of 26 years.”

Lung conditions among cannabis smokers included more emphysema, including bullous emphysema, which increases the risk for pneumothorax. Pulmonary function tests revealed greater damage in gas diffusion than in tobacco smokers, even though their exposure to tobacco was similar. The study also found that cannabis smokers had a higher incidence of poor prognosis cancers, such as poorly differentiated carcinomas and sarcomatoid carcinomas.

New Perspectives and Concerns

Pradère emphasized that her research aligns with recent studies in France, such as [the KBP study](#), which has increasingly focused on the potentially harmful effects of cannabis. However, she believes pulmonologists have not fully addressed the issue and that many still struggle to provide clear guidance to patients on cannabis-related health risks, including how to manage cannabis withdrawal — often a more challenging process than quitting tobacco. “I believe this

is an area where we must make progress within the medical community,” she concluded.

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Credits

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