Quitting Smoking After Lung Cancer Diagnosis Improves Survival

Providers who treat smokers with lung cancer should offer support to help them quit.

February 3, 2022 By Liz Highleyman

People who quit smoking around the time they were diagnosed with lung cancer saw a nearly 30% improvement in overall survival, according to a meta-analysis published in the Journal of Thoracic Surgery.

“Quitting smoking at or around diagnosis is associated with a beneficial effect on the survival of lung cancer patients,” the study authors concluded. “Treating physicians should educate lung cancer patients about the benefits of quitting smoking even after diagnosis and provide them with the necessary smoking cessation support.”

Lung cancer is the leading cause of cancer-related death in the United States and worldwide. While it is well known that smoking tobacco is a major risk factor for lung cancer, and quitting lowers the risk of developing the malignancy, there has been less research on smoking cessation after a lung cancer diagnosis.

Saverio Caini, MD, PhD, of the Institute for Cancer Research, Prevention and Clinical Network in Italy, and colleagues performed a systematic literature review and meta-analysis to summarize current evidence about whether quitting smoking has a beneficial effect on lung cancer survival.

The study authors searched the MEDLINE and EMBASE databases for articles published through October 2021 that quantified the effect of smoking cessation shortly before, at or around the time of diagnosis or during treatment. They included 21 papers published between 1980 and 2021, which together encompassed nearly 11,000 lung cancer patients. All of the studies were conducted in high-income countries.

A pooled analysis of the data showed that quitting smoking at or around the time of diagnosis was significantly associated with improved overall survival, reducing the risk of death by 29% compared with continuing to smoke.

Improvement was seen in studies of people with non-small-cell lung cancer (23% reduction) and those with the less common small-cell lung cancer (25% reduction) as well as in studies that included people with both types or whose histological type was not specified (19% reduction).

Smoking cessation also appeared to improve disease-free survival, although these data were more limited.

“There are several plausible biologic mechanisms able to explain the observed effect of smoking cessation on patients with lung cancer’s survival. Tobacco smoke promotes tumor growth, progression and dissemination; decreases the efficacy of, and tolerance to, radiation and systemic therapy; and increases the risk of postoperative complications and second primary cancers,” the study authors wrote. “Continued smoking during treatment surely has an impact on comorbidities, but it also seems to be true for treatment efficacy.”

While chemotherapy seems to be more effective for nonsmokers, they added, some studies have shown that smokers appear to benefit more from immunotherapy, perhaps because they have a higher tumor mutation burden, which attracts cancer-fighting T cells. But the KEYNOTE-024 trial, which compared Keytruda (pembrolizumab) versus chemotherapy, found that former smokers had better survival outcomes than current smokers.

This type of analysis has some limitations and possible sources of bias. For example, people who continue to smoke and those who are able to quit may differ in important ways, and they might be given different types of treatment. And people with earlier-stage cancer—who have a better chance of survival—might be more motivated to quit.

The researchers recommended that oncologists and health care systems should integrate smoking cessation programs into lung cancer care. What’s more, lung cancer screening, which targets heavy smokers, could serve as a “teachable moment” to help participants quit.

“[T]he data currently available are, in our opinion, robust enough to conclude with the recommendation that inviting patients to quit smoking at diagnosis or during treatment or follow-up encounters, and giving them all the support necessary to succeed in their attempts to quit and remain abstinent during and after therapy, should arguably become a nonoptional part of the management of these patients given the potentially large gain in survival that can ensue,” the authors wrote.

While some people diagnosed with lung cancer may feel hopeless and think there’s no point in stopping smoking now, these findings show that it’s never too late to quit.

Click here to read the study abstract.

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