Recurrent Pneumonia in People With HIV Might Increase Lung Cancer Risk

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Recurrent bacterial pneumonia infections in people living with HIV increase the odds of developing lung cancer, according to a study published online August 23 in the *Journal of Acquired Immune Deficiency Syndromes*.

Non-AIDS-related cancers—such as liver cancer, anal cancer and lung cancer—are a growing concern for people with HIV. Researchers have demonstrated that the rates of all of these cancers have increased in recent years at the same time that AIDS-related cancers have dropped. Moreover, rates of a number of non-AIDS-related cancers are much higher in people with HIV than their HIV-negative counterparts. Lung cancer is no exception.

In fact, studies have shown that lung cancer is now the third most common cancer in people with HIV. What's more, it is two to five times more likely in HIV-positive individuals than in HIV-negative people. People with HIV are far more likely to smoke than the general population—the leading cause of lung cancer in the United States—which could explain a larger proportion of lung cancer cases. Even after adjusting for smoking, however, researchers still find that lung cancer rates are higher in people with HIV.

To help understand this phenomenon, Fatma M. Shebl, MD, PhD, and her colleagues from the National Cancer Institute in Rockville, Maryland, examined the medical records from more than 300,000 people living with HIV. Shebl's team started from the hypothesis that several common lung ailments—tuberculosis, Pneumocystis jiroveci pneumonia (PCP) and recurrent bacterial pneumonia—might explain the proportion of lung cancer cases not directly related to smoking. They felt this could be due to increased inflammation in the lungs. The team looked at cancer registries and records of the three HIV-associated lung conditions over the 10 years following an AIDS diagnosis among the cohort.

They found that recurrent bacterial pneumonia—defined as at least two episodes of bacterial pneumonia in one year—was strongly associated with an increased lung cancer risk, while tuberculosis and PCP were not. People who'd experienced recurrent bacterial pneumonia were 63 percent more likely to develop lung cancer than people who'd not had recurrent pneumonia. The odds of developing lung cancer were even higher among people younger than 50 who'd developed recurrent bacterial pneumonia.

Shebl and her colleagues did not have data on the smoking habits of the people they studied, so they could not directly control for smoking in their analysis. They did, however, conduct several analyses that assumed varying rates of smoking among the cohort. When the team factored in smoking in this way, they found that the increased risk from recurrent bacterial pneumonia—while still strong—was no longer statistically significant, meaning that the association could have occurred by chance.

“Lung cancer risk was significantly elevated among [people with an AIDS diagnosis] who had recurrent pneumonia, suggesting a role for pulmonary infections and inflammation in lung carcinogenesis,” they concluded. “Additional studies utilizing biological markers for pulmonary infections and inflammation, along with detailed information on smoking behaviors, are needed to further characterize the mechanisms of increased lung cancer risk among [people with HIV].”

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