People Living With HIV May Develop Lung Cancer Earlier

Study suggests current lung cancer screening guidelines may be inadequate for HIV-positive people.

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People living with HIV, especially women, appear to develop lung cancer at an earlier age—and with a less extensive smoking history—and current screening guidelines may miss many who could benefit from earlier detection and treatment, researchers reported at the Conference on Retroviruses and Opportunistic Infections (CROI 2019) last week in Seattle.

A study of HIV-positive women and men with lung cancer suggests that the current 30-year smoking history threshold for cancer screening should be nearly halved for women and reduced by about a third for men living with HIV.

“People with HIV may not be adequately captured by current screening recommendations,” said lead researcher Subhashini Sellers, MD, of the University of North Carolina at Chapel Hill.

As people with HIV live longer thanks to effective antiretroviral therapy, AIDS-related mortality has dropped and non-communicable diseases such as cancer and cardiovascular disease now account for a growing proportion of deaths. Lung cancer is the leading cause of cancer-related death for both HIV-positive and HIV-negative people.

Prior studies have shown that lung cancer is one of several non-AIDS malignancies that occurs at a higher rate in people living with HIV, and HIV-positive people are diagnosed with lung cancer at an earlier age and have worse survival, Sellers said. This suggests that people with HIV might benefit from earlier screening to catch the disease at a more treatable stage.

Lung cancer often does not cause symptoms at early stages and many people are diagnosed late, when it is more difficult to treat. The National Lung Screening Trial, which enrolled more than 53,000 current and former heavy smokers—but excluded people with HIV—found that those who received annual low-dose computed tomography (CT) scans had a 20 percent lower risk of lung cancer death.

Current U.S. Preventive Services Task Force (USPSTF) recommendations call for annual CT screening of people ages 55 to 80 with a cumulative smoking history of at least 30 pack-years—for

example, smoking one pack of cigarettes a day for 30 years or two packs a day for 15 years—who either still smoke or have quit within the past 15 years. However, only about 2 percent of people at risk get the recommended screenings.

A mathematical modeling study last year showed HIV-positive people who undergo CT screening could reduce their risk of lung cancer death by about the same amount as HIV-negative individuals, with benefits extending down to those age 45 and with a 20 pack-years smoking history.

Sellers and colleagues evaluated whether the criteria used in the National Lung Screening Trial would adequately identify lung cancer in men and women with HIV, and whether alternative thresholds might improve detection in this population.

The analysis included current or former smokers age 40 or older with confirmed lung cancer in two large observational cohorts, the Women's Interagency HIV Study (WIHS) and the Multicenter AIDS Cohort Study (MACS). They were matched with similar HIV-positive control subjects without lung cancer from the same cohort.

During the study period, 44 women in WIHS and 17 men MACS were newly diagnosed with lung cancer. This reflects a lung cancer incidence rate of 270 per 100,000 person-years among women and 104 per 100,000 person-years among men. These findings mirror lung cancer trends in the general population, with stable incidence among women and decreasing incidence among men, Sellers said.

Women with and without lung cancer were about equally likely to be current smokers (61 percent versus 59 percent) and have a smoking history of 30 pack-years or more (30 percent versus 20 percent). However, those with lung cancer who had quite were nearly twice as likely to have done so within the past 15 years (93 percent versus 56 percent).

Men with lung cancer were much more likely to still smoke and to have at least a 30 pack-year history than those without lung cancer (71 percent versus 24 percent for both). In both groups, most quitters had done so within the past 15 years (100 percent versus 92 percent).

The researchers found that just 16 percent of the women and 24 percent of the men diagnosed with lung cancer met the USPSTF screening criteria.

The researchers calculated that the optimal criteria for HIV-positive women would be to start screening at age 49 with a smoking history of 16 or more pack-years and a quit time of 15 years. For HIV-positive men, the optimal criteria would be age 43 with a smoking history of more than 19 pack-years and a quit time of 15 years.

For HIV-positive women, decreasing the age threshold, the amount of time since smoking cessation or the number of pack-years—while holding the other two variables steady—increased sensitivity, or the ability of the criteria to accurately identify those with lung cancer. For men, lowering the screening age from 55 to 40 made the biggest difference. Adding low CD4 count or

an AIDS diagnosis did not improve sensitivity.

“Current USPSTF lung cancer screening guidelines performed poorly in people living with HIV,” the researchers concluded. “Alternative thresholds of younger age and decreased pack year history and quit date can better identify people living with HIV to screen for lung cancer.”

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