Are Cancer Rates Declining Among People With HIV?

Despite an overall decrease in cancer incidence, malignancies linked to human papillomavirus and viral hepatitis remain a concern.

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Rates of most types of cancer are falling or stable among people living with HIV, according to findings from a large cohort study reported in JAMA Oncology. Cancers related to immune suppression continue to decline, but HIV-positive people remain at substantially higher risk for anal and liver cancer compared with the population at large.

Rates of some common malignancies, such as breast, prostate and colon cancers, declined or stayed about the same among both HIV-positive and HIV-negative people, so comparative rates (known as standardized incidence ratios, or SIRs) did not change, "suggesting that incidence trends in people with HIV reflected those in the general population," study authors Meredith Shiels, PhD, of the National Cancer Institute (NCI), and colleagues wrote.

Studies have shown that people with HIV are not at greater risk for these malignancies, and HIV-positive men may actually be less likely to develop prostate cancer.

"In this cohort study, significant declines in the incidence and relative risk for cancers among people with HIV demonstrate continued progress in HIV treatment and cancer prevention," the researchers concluded. "These estimates may provide insight into the priorities for prevention and early detection of cancer as the population of people with HIV enters ages with greater risk for cancer."

Cancer rates among people with HIV have declined for certain types, like non-Hodgkin lymphoma and Kaposi sarcoma, due to improved HIV care, though the risk for other cancers remains largely unchanged.

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Thanks to effective antiretroviral treatment, people with HIV are living longer and are less likely to die of AIDS-related illnesses. But the aging population is increasingly prone to chronic conditions such as cancer and cardiovascular disease. Even with effective treatment, persistent HIV infection can lead to chronic inflammation that raises the risk for a multitude of health problems. What's more, people with HIV are more likely to smoke compared with the general population and are more likely to have hepatitis B or hepatitis C, which can cause liver cancer.

Shiels and colleagues analyzed data from the NCI's HIV/AIDS Cancer Match Study, which looked at medical records from nearly 850,000 people with HIV in 12 U.S. states, Washington, DC, and Puerto Rico from 2001 to 2019. Cancer rates in this cohort were compared with those of the general population. Although the data are more than five years old, they cover a period when modern antiretrovirals were widely available.

The researchers found that the incidence of opportunistic cancers such as Kaposi sarcoma (KS) and Hodgkin and non-Hodgkin lymphoma, which are a risk for people with a low CD4 T-cell count, has continued to decline. The incidence of KS decreased by 24%, diffuse large B-cell lymphoma (DLBCL) decreased by 23% and Hodgkin lymphoma decreased by 25% between 2010-2014 and 2015-2019.

Rates of lung cancer and liver cancer also continually declined from 2001 to 2019. Between 2010-2014 and 2015-2019, lung cancer decreased by 17% and liver decreased by 25%. The drop in lung cancer—also seen in the general population—is attributable in part to a decline in smoking. Widespread hepatitis B vaccination and effective treatment for hepatitis C likely contributed to the decline in liver cancer, though fatty liver disease, which can also lead to this malignancy, is on the rise among HIV-positive and HIV-negative people alike.

"Incidence of these cancers dramatically increased with age, implying that the burden of these cancers will increase as this population grows older," the study authors wrote. "With poor survival, lung and liver cancer are poised to be two of the greatest contributors to cancer mortality in people with HIV."

There has been "less clear progress" in reducing the incidence of cancers related to human papillomavirus (HPV). For historical political reasons, invasive cervical cancer is considered an AIDS-defining condition, but anal cancer is not. Unlike KS—which is rare among HIV-positive people who experience immune recovery on antiretrovirals—HPV and its complications remain more common among people with HIV even if they are on effective treatment.

Rates of cervical and anal cancer remained stable among people with HIV, and rates of mouth and throat cancer declined, but the researchers noted a "concerning increase" in cancer of the vulva

(external female genitalia). In fact, vulvar cancer was the only malignancy with both increased incidence and SIRs. Only around a quarter of vulvar cancer is thought to be attributable to HPV, the researchers noted. “Given the very high SIR for vulvar cancer in women with HIV and rising incidence rates, more research should be prioritized,” they wrote.

Among HIV-positive people ages 70 to 84 years, incidence rates were highest for prostate, lung, female breast, colon and liver cancers. The first four are also the most frequently diagnosed cancers among HIV-negative people, but liver cancer does not make the top 10.

“Despite lower than expected rates, the results of this cohort study showed that the incidence of breast, colon and prostate cancers dramatically increased with older age, and thus, the burden among people with HIV can be expected to increase,” the researchers wrote.

From 2015 to 2019, people with HIV continued to have a significantly greater risk compared with HIV-negative people for KS (more than 200-fold higher), Hodgkin lymphoma (six times higher), DLBCL (five times higher), anal cancer (17 times higher), vulva cancer (11 times higher), liver cancer (nearly twice as high) and lung cancer (1.6 times higher). The researchers noted that SIRs for opportunistic cancers were highest at younger ages, “which may partly reflect delayed HIV diagnosis and treatment, and poorer viral suppression, among younger people with HIV.”

To optimize cancer prevention in an aging HIV population, “multipronged strategies are needed,” according to the study authors.

The risk for several cancers can be “effectively mitigated” through timely HIV diagnosis and viral suppression on antiretroviral therapy. Tailored smoking cessation programs may further reduce the risk of lung cancer and other smoking-related cancers. Cancers driven by coinfections can be prevented with HPV and hepatitis B vaccination and prompt hepatitis C treatment. The HPV vaccine is recommended for people up to age 26 and available through shared clinical decision-making for those ages 27 to 45, though the benefits are unclear for adults with HIV, the researchers noted.

“The role of screening for cancer prevention will be increasingly important to reduce cancer mortality,” the authors said in their discussion of the results.

“Of HPV-related cancers, there are tailored screening recommendations for women with HIV for cervical cancer. However, improvements to implementation and new modalities are warranted as incidence remains unchanged at the population level,” they wrote. “With evidence for the efficacy of treating screen-detected anal cancer, recent guidelines recognize people with HIV, particularly men who have sex with men, as a priority population and trends should be monitored as screening is implemented.”

“Whether screening guidelines for liver and lung cancer should be tailored for people with HIV, as is the case for cervical and anal cancer, or follow those of the general population, as is the case for breast, colon and prostate cancers, merits additional investigation,” they added. “Continued monitoring of these trends will be essential to determining the effectiveness of these strategies

and determining future priorities to further extend the lives of people with HIV and reduce cancer as a cause of morbidity.”

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