

Earlier antiretroviral therapy might reduce the burden of cancer in those with HIV

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HIV-infected patients are at increased risk for cancer as a result of both their impaired immune system and lifestyle factors, such as smoking, according to researchers at Kaiser Permanente.

The study, which appears in the current issue of *Cancer Epidemiology, Biomarkers and Prevention*, is among the first to directly compare the risk of cancer in HIV-infected patients with a comparison group without [HIV infection](#), while accounting for major cancer risk factors.

Of the 10 cancer types studied, six were more common in [HIV patients](#), compared with patients without [HIV](#) infection — including, Kaposi's sarcoma, non-Hodgkin lymphoma, Hodgkin lymphoma, melanoma, anal cancer and liver cancer, while prostate cancer was less common. Lung and oral-cavity cancers also occurred more frequently in HIV patients, although most of the risk appeared to be due to risk factors such as smoking, according to the investigators.

Further analysis suggested that immunodeficiency — as measured by CD4 count (a measure of the strength of the [immune system](#)) — was positively associated with the risk of all studied cancer types, except prostate cancer. The amount of HIV virus in the blood, however, was only associated with two cancers, Kaposi sarcoma and non-Hodgkin lymphoma, they said.

Most cancers found to be associated with immunodeficiency had a known infectious cause, suggesting a mechanism in which an impaired

immune system cannot adequately suppress certain cancer-causing viral infections such as human papillomavirus or hepatitis, investigators explained . They also acknowledged that for some cancers, such as lung and oral-cavity cancers, the elevated risk was multifactorial and likely resulted from both an impaired immune system and risk factors such as smoking.

"Taken together, we believe our results support cancer prevention strategies that combine routine prevention activities, such as smoking cessation, with earlier HIV treatment to help maintain a patient's immune system," said study lead author Dr. Michael Silverberg, PhD, MPH, a research scientist with the Kaiser Permanente Division of Research in Oakland, Calif. The main goal of the study, he added, was to determine how much of the increased cancer risk in HIV patients resulted from their disease, and how much was due to risk factors. To accomplish this goal, they performed a cohort study from 1996-2008 of adult HIV-infected and demographically similar HIV-uninfected individuals from Kaiser Permanente Northern and Southern California. The risk for 10 [cancer types](#) were compared between groups, while adjusting for [cancer risk factors](#) including smoking, alcohol/drug abuse, and overweight/obesity. They also evaluated the effect of CD4 and HIV virus levels, both of which are markers for HIV disease severity.

"After adjusting for [risk factors](#), the incidence rates of six of 10 cancers were markedly elevated in HIV patients. When we looked more closely we discovered that for most cancers studied — eight of 10 — HIV patients with the lowest CD4 had higher rates compared with those without HIV," said Dr. Silverberg. "These findings need confirmation in other settings, particularly colorectal [cancer](#), which has not been previously linked to immunodeficiency."

Provided by Kaiser Permanente

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