New research highlights why HIV-infected patients suffer higher rates of cancer

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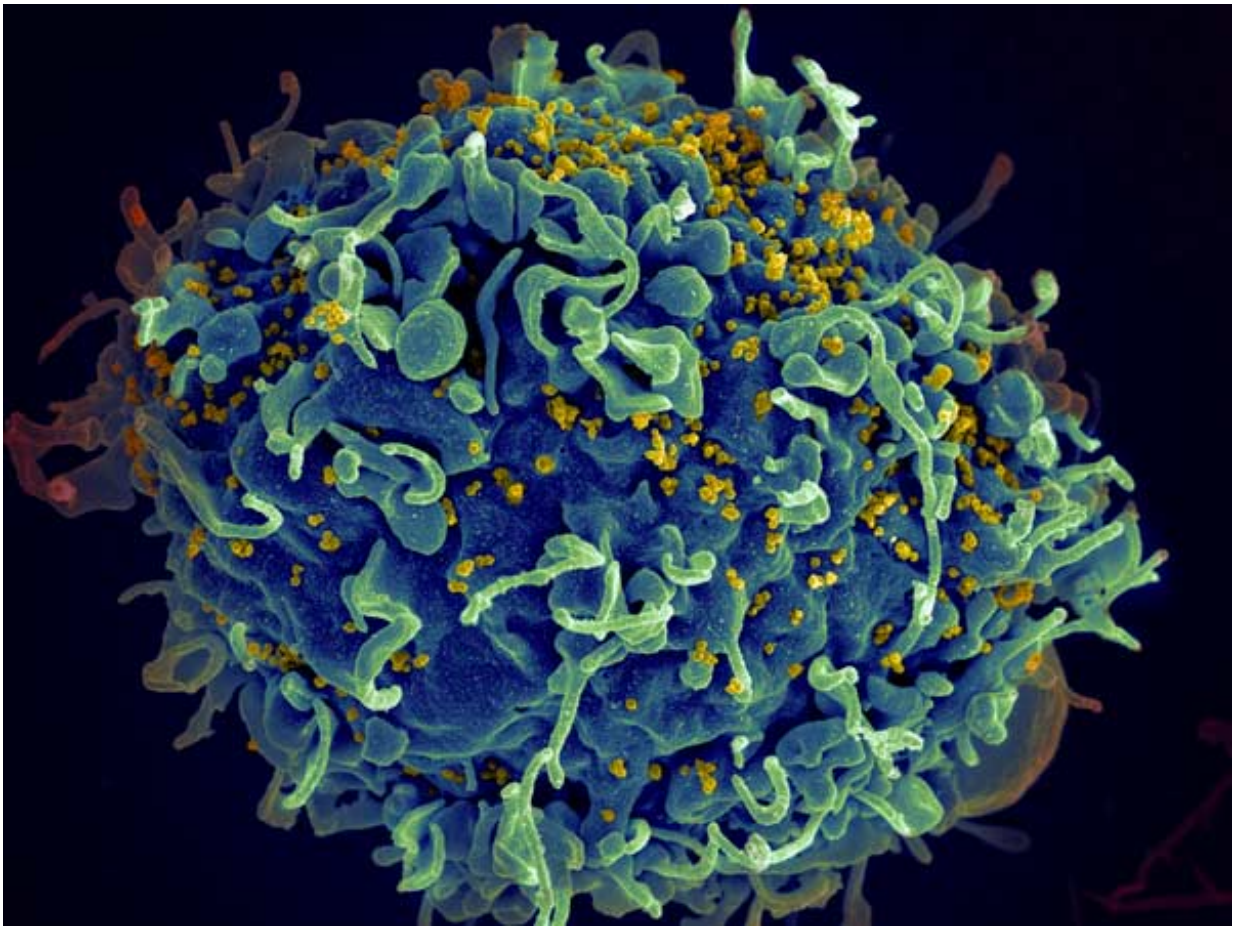

HIV infecting a human cell. Credit: NIH

AIDS patients suffer higher rates of cancer because they have fewer T-

cells in their bodies to fight disease. But new research examines why HIV-infected patients have higher rates of cancer—among the leading causes of death among that population—than the general population.

Researchers at Case Western Reserve University's School of Dental Medicine, who lead the study, published their results in *Nature Communications*, highlighting how T-cells move, multiply and invade other cells in HIV-infected patients.

"The cells in question release exosomes into the blood stream—think small nanoparticles—that don't cause cancer, but they support it," said Ge Jin, associate professor of biological sciences at the School of Dental Medicine and the study's author and principal investigator. "In other words, the cancer grows faster and more aggressively in patients with HIV."

Compared with the general population, people infected with HIV are:

- 500 times more likely to be diagnosed with Kaposi sarcoma;
- 12 times more likely to be diagnosed with non-Hodgkins lymphoma;
- and, among women, three times more likely to be diagnosed with cervical cancer, according to the National Cancer Institute.

"There are big implications here," Jin said. In addition to being linked to an increased risk of cancer, HIV-infected patients are more likely to die of other type of cancer, including lung cancer and cancer in the head and neck, than uninfected people with the same cancers.

Researchers studied more aggressive cells in head and neck cancer cases related to 18 HIV-infected patients—12 of them from Cleveland. In a nutshell, exosomes played a big role in altering the growth and spread of cancer cells in the patients studied, Jin said.

"They assist in a way we hadn't—until now—been able to understand," he added.

More information: Lechuang Chen et al, Exosomes derived from HIV-1-infected cells promote growth and progression of cancer via HIV TAR RNA, *Nature Communications* (2018). DOI: 10.1038/s41467-018-07006-2

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