Immune Suppression Linked to HPV-Related Cancers

People living with HIV and those who have received organ transplants are more likely to develop cancers caused by human papillomavirus.

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People living with HIV and those who have received organ transplants are more likely to develop cancers caused by human papillomavirus (HPV), underscoring the importance of antiretroviral treatment and HPV vaccination, according to a large Swedish study.

HPV—the most common sexually transmitted infection—causes abnormal cell changes that can lead to several types of cancer, including anal, cervical, penile, vulvar and oropharyngeal (mouth and throat, sometimes classified as head and neck) cancers. People with HIV are more likely to acquire HPV, carry more types of HPV, are less likely to naturally clear the virus and are more prone to progress to invasive cancer. Transplant recipients who take immune-suppressing drugs to prevent organ rejection are also at higher risk.

Eva Meglic, MSc, of the Karolinska Institute, and colleagues conducted a retrospective case-control study that included 32,093 people with HPV-related cancers and 320,930 people without these cancers. Cervical cancer was most common, followed by head and neck cancer and anal cancer. Overall, HIV-positive people were 4.5 times more likely to develop these cancers, while the risk more than doubled for transplant recipients. The biggest difference was a 59-fold increase in anal cancer among people with HIV. Both groups were about twice as likely to have cervical cancer. However, the risk of head and neck cancer was not substantially elevated.

Among people with HIV, having a lower current CD4 count, a lower nadir (lowest-ever) CD4 count, a shorter duration of viral suppression and a higher peak viral load were associated with higher risk of HPV-related cancers.

“Overall, incomplete immune reconstitution likely contributes to long-term cancer risk, supporting early antiretroviral therapy initiation and durable viral suppression,” the researchers wrote. “These findings highlight the need for enhanced prevention, including HPV vaccination, screening and

optimized immuno-suppressive regimens.”

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