An Aspirin a Day to Keep HIV-Related Cervical Cancer Away?

January 19, 2012

Might an aspirin a day help keep cervical cancer away? Though there aren't yet any studies indicating it will, researchers have uncovered a biological connection between HIV-associated inflammation and cervical cancer that may be curtailed by the affordable and widely available drug.

According to the team of scientists—investigators associated with New York-Presbyterian Hospital and Weill Cornell Medical Center in Manhattan and other cancer specialists in New York, Qatar and Haiti—aspirin should be evaluated in clinical trials for its ability to prevent cervical cancer in women living with HIV.

The team's suggestion is based on a report published in the January 2012 issue of Cancer Prevention Research. According to the paper authored by Daniel Fitzgerald, MD, of Weill Cornell Medical Center and his colleagues, the simple and inexpensive solution has the potential to provide enormous benefit for women living with HIV in the Caribbean, Latin America and Africa, who suffer from a disproportionately high rate of cervical cancer death.

"These young patients, many of whom were mothers and the sole support for their families, had worked hard to have their HIV controlled with antiretroviral therapy, only to develop and die from cervical cancer," says Fitzgerald in an accompanying announcement.

According to experiments conducted by Fitzgerald's group, HIV was found to increase production of the COX-2/prostaglandin E2 (PGE2) inflammatory pathway in cervical tissue samples from Haitian women who were HIV positive.

The researchers examined levels of COX-2 and PGE-M—a stable metabolite of PGE2—in three groups of women and found increased levels of both molecules in 13 HIV-positive women who were coinfected human papillomavirus (HPV), the virus primarily responsible for cervical cancer. COX-2 and PGE-M were also elevated in 18 women who were HIV positive but negative for HPV; levels were lowest in 17 women negative for both HIV and HPV.

The findings confirm two widely accepted scientific facts: That HIV causes chronic inflammation and that PGE2, which is elevated during inflammation, is associated with an increased risk of cancer. The research also succeeded in taking things one step further, documenting for the first

time that HIV ramps up production of PGE2 in cervical tissue.

This may help explain why HIV-positive women are five times more likely to develop invasive cervical cancer than HIV-negative women, the researchers note. It also suggests that inhibitors of the COX-2 molecule (which contributes to the production of PGE2) might break the link between HIV and cervical cancer.

Aspirin is one of the cheapest and most effective COX inhibitors available throughout the world.

The researchers conclude that future studies will be needed to determine whether aspirin or aspirin-like agents—known inhibitors of COX/prostaglandin production—can reduce the risk of cervical cancer in high-risk populations of women living with both HIV and HPV.
