New Explanation for High HIV Infection Rates in African Women

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Systemic infections such as malaria might explain why women in sub-Saharan Africa are so much more vulnerable to HIV infection than women in other parts of the world, according to reporting from allAfrica.com.

Researchers have long noted that women in sub-Saharan Africa are far more likely to become infected than women in resource-rich countries. A number of theories have been proposed to explain the discrepancy, including higher numbers of sex partners and sexually transmitted infections (STIs). None of these theories, however, have been able to fully account for the differing infection rates.

Now, Craig Cohen, MD, MPH, from the University of California in San Francisco, and his colleagues are proposing an alternative theory—cellular activation in the vagina due to infections not spread by sexual contact. Though researchers have previously found that these types of infections can activate immune cells in other parts of the body, they have not looked at immune cells in the genital tract before.

Cohen and his team closely examined immune cells from the vagina and cervix in women (ages 18 to 24) in Kisumu, Kenya, and compared them with vaginal cells in women in San Francisco. Cohen's group found that the women in Kenya had much higher levels of immune activation in genital cells than women in San Francisco—and most important, these higher activation levels were not due to STIs or to sexual activity. Rather, researchers are now looking at endemic infections, such as malaria and schistosomiasis, as well as other culprits to help explain the higher activation levels.

"For the first time our observations suggest that differences in the genital tract immune milieu may be an important additional contributor," Cohen told allAfrica.com

François Venter, MD, University of the Witwatersrand in Johannesburg, South Africa, said: "[The study] is exciting, and hopefully will start to answer why the epidemic is so bad in our region—70 percent of the entire world's population of HIV-infected people live in sub-Saharan Africa."

"We've had many theories around culture, behavior and biology," Venter continued, "but none has proven adequate alone to explain this disproportionate vulnerability to infection. This research

may help provide some, if not all, of the answers.”

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