Vaginal Bacteria May Raise HIV Risk in South Africa

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Differences in the bacterial colonies in the genital tracts of South African women, when compared with American women, may raise the South Africans' relative risk of HIV infection. Publishing their findings in the journal Immunity, researchers analyzed genital samples from 94 young, black, HIV-negative South African women.

In the United States, the bacterial communities of female genital tracts are dominated by Lactobacillus. In the South African women, the researchers found four main bacterial community types, the most common of which had a very diverse population of bacteria, including low levels of Lactobacillus and no single dominating bacterial group.

After measuring the pro-inflammatory cytokines (immune molecules that prompt inflammation) in the women, the researchers found that the women with the diverse bacterial communities were more than four times as likely to have genital inflammatory cytokines than the women with the other types of communities. The diverse bacterial community was a better predictor of inflammation than the presence of sexually transmitted infections or other bacterial infections.

The women with the highest levels of genital inflammation also had raised levels of the CD4 cells that HIV targets.

"It has been shown that having a higher frequency of these HIV target cells at the site of exposure increases the risk of infection," the study's lead author, Melis Anahtar, an MD/PhD candidate in the Harvard/MIT Division of Health Sciences and Technology, said in a press release. "It's possible that treatments targeting specific genital bacteria could improve the effectiveness of measures—such as antiretroviral vaginal gels—designed to prevent HIV infection." She suggests that "targeting the genital microbial population may further reduce" the risk of HIV.

To read the study abstract, click here.

To read the press release, click here.

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