Microbial function and inflammation in young South African women at risk of HIV infection

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Video Byte

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Abstract

Despite a large reduction in AIDS-related deaths as a result of HIV antiretroviral programs, the global incidence of HIV has only decreased by 16% in the past 10 years. One hotspot is in South Africa, where young women in particular face high rates of HIV infection. In a recent study, researchers followed up on their previous observation that female genital tract (FGT) inflammation increases HIV risk by evaluating the relationship between FGT inflammation and microbial function in 113 young South African women at high risk of HIV infection. Using metaproteomics to characterize a total of 3,186 microbial and human proteins from vaginal wall swabs, they found that women with elevated FGT inflammation had increased non-optimal bacteria and decreased lactobacilli. Reduced cell wall organization and peptidoglycan biosynthesis were also associated with high FGT inflammation levels. These results suggest that in addition to the presence or absence of specific microbial taxa in the FGT, their functional profiles are also critical determinants of FGT inflammation, and identify a possible avenue for biotherapeutic development to reduce FGT inflammation and protect against elevated HIV risk. View the accompanying tool for this research at: .