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ORIGINAL RESEARCH COMMUNICATION

Nutritional biomarkers associated with gynecological conditions among US women with or at risk of HIV infection [1,2,3]

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Background: Women infected with HIV face a combination of health threats that include compromised nutrition and adverse gynecological conditions. This relation among HIV, nutrition, and gynecological conditions is complex and has rarely been investigated.

Objective: Our objective was to investigate nutritional biomarkers associated with several gynecological conditions among US women with or at risk of HIV infection.

Design: Data on 369 HIV-infected and 184 HIV-uninfected women with both nutritional and gynecological outcomes were analyzed from a cross-sectional nutritional substudy of the HIV Epidemiology Research Study (HERS). We examined micronutrient distributions comparing HIV-infected with HIV-uninfected participants and both subgroups with the US population. We then modeled the relation of 16 micronutrient serum concentrations to various gynecological conditions, producing partially adjusted odds ratios, adjusted for study site, risk cohort, and HIV status.

Results: HIV-infected women's median antioxidant concentrations were lower than the medians of the US population. HERS women had lower median concentrations for vitamin A, selenium, and zinc irrespective of HIV status. Trichomoniasis prevalence was inversely related to serum α-carotene. Lower concentrations of vitamins A, C, and E and ß-carotene were associated with an increased risk of bacterial vaginosis. Higher concentrations of serum zinc were associated with lower risk of human papillomavirus. *Candida* colonization was higher among women with higher concentrations of total-iron-binding capacity.

Conclusion: We identified several significant associations of micronutrient concentrations with the prevalence of gynecological conditions. These findings warrant further investigation into possible causal relations.

Key Words: HIV • nutritional status • bacterial vaginosis • trichomoniasis • human papillomavirus • HPV • *Candida*

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