Bacterial Vaginosis and High-Risk Human Papillomavirus Co-Infection Among African American Women in the United States

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Background
Bacterial vaginosis (BV) increases the risk of many sexually transmitted infections. The co-occurrence of persistent BV and high-risk HPV (HR-HPV) increases the risk of developing cervical cancer. This study aims to investigate the co-occurrence of HR-HPV and BV among young women in the US.

Methods
Stored vaginal swabs were acquired from a previously completed clinical trial. The kinds of bacteria present in the samples were identified by classifying 16S rRNA gene sequences in each sample using high-throughput pyrosequencing. HPV genotyping was performed using quantitative polymerase chain reaction, performed using TaqMan probes in a customized plate (Thermo Fisher Scientific; Waltham, Massachusetts). BV was classified using Nugent Scores of Gram Stain.

Results
Eighty reproductive age African American (AA) women were included in the analysis. The point prevalence of HR-HPV was 48.1% (95% CI: 37–59%). The mean age of the participants was 21.4 years (SD: 2.11). 81.2% graduated high school. Prior antibiotic use was low (3.8%), and 75% were not treated for BV during their lifetime. Among those who had been treated previously for BV, most women were treated ≥ five times (60%). According to Nugent Scores, 70% had BV, 13.7% had intermediate flora and 16.3% were healthy. Among HR-HPV positive women, 66.7% were infected with single HR-HPV genotype, 33.3% with multiple HR-HPV genotypes. Concurrent HR-HPV and BV infection was found among 33.3% of the sample. However, there was no significant difference between the prevalence of HR-HPV among women with and without BV.

Conclusion
Co-occurrence of HR-HPV and BV among this group of young African American women was relatively high. Considering that these conditions are very common among women worldwide, further research in this field is imperative. More studies are needed to accurately evaluate temporal sequence of acquisition of both conditions in any attempt to establish a causal relationship.

Disclosure
No significant relationships.

Co-Occurrence of Bacterial Vaginosis and Trichomonas Vaginalis Among Young African American Women

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Background
While the etiology of bacterial vaginosis (BV) is still not known, it is described as a polymicrobial condition that lacks lactic-acid producing Lactobacillus species with an overgrowth of anaerobic bacteria and elevated vaginal pH. This study aims to evaluate the relationship between BV assessed by Nugent scoring of vaginal Gram stain and Trichomonas vaginalis infection among African American young women in the US.

Methods
Stored vaginal swabs from a previously completed clinical trial were acquired for this study. The kinds of bacteria present in the samples were identified by classifying 16S rRNA gene sequences using high-throughput pyrosequencing. Vaginal smears were also categorized by the Nugent Gram stain score (0–3, normal; 4–6, intermediate state; 7–10, BV). TV genotyping was performed using quantitative polymerase chain reaction, performed using TaqMan probes in a customized plate (Thermo Fisher Scientific; Waltham, Massachusetts). Descriptive statistics were conducted to determine the odds of TV infection among women with BV.

Results
This study included 80 African American reproductive age women with a mean age of 21.4 years (SD: 2.11 years). Most (81.2%) women had graduated high school. 70% (95% CI: 37–59%) had BV, 13.7% had intermediate and 16.3% had healthy vaginal flora. TV was diagnosed among 11.1% (95% CI: 4–8%) of the women. Prior antibiotic use was low (3.8%), and 75% of women had not been treated for BV during their lifetime. Among those who were previously treated for BV, 60% were treated five or more times. Douching was reported by 49% of the sample. 55% of TV cases had concurrent BV, while 11.1% of TV cases also had intermediate vaginal flora. There were no association with prior antibiotic use, hormonal contraception, douching or prior treatment.

Conclusion
Young African American women of reproductive age found to have abnormal vaginal flora should be screened for Trichomonas vaginalis infection.

Disclosure
No significant relationships.

Overlap Between Amsel’s Criteria, Nugent’s Gram Stain Score, and Vaginal Microbiota Community State Types

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Background
Bacterial vaginosis (BV) is characterized by low-Lactobacilli and increased anaerobes. BV can be determined by clinical assessment (Amsel’s criteria) or microscopy (Nugent scoring); molecular methods are also under study. We investigated concordance between Amsel-BV, Nugent-BV and Lactobacillus vaginal microbiota identified via 16S rRNA gene sequencing.

Methods
Vaginal swabs and clinical data were collected from women enrolled in a longitudinal study. Amsel’s criteria were determined clinically and Nugent scoring (Nugent-BV=7–10, intermediate=4–6) was determined by microscopy. Vaginal microbiota were characterized using 16S rRNA gene sequencing and categorized into 7 community state types (CSTs): 4 dominated by Lactobacillus spp. (CST I, II, III and V), and 3 by Streptococcus spp. (CST VI), Bifidobacterium spp. (CST VII), or a variety of anaerobes (CST IV).

Disclosure
No significant relationships.

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