



Center for Collaborative Research
in Health Disparities

Research Highlights

The cervicovaginal microbiome of Puerto Ricans with Cervical Intraepithelial Neoplasia and High-Risk Human Papillomavirus Infections



Filipa Godoy-Vitorino, Ph.D.
Department of Microbiology
School of Medicine
UPR Medical Sciences Campus

Lay Summary: Puerto Rican women have low cervical cancer screening rates, higher HPV prevalence and a higher age-adjusted incidence for cervical cancer than women in the U.S. mainland. In this study, authors hypothesized that the bacteria and fungi in the vagina and cervix of these women were likely involved in resilience to infection and cancer progression. They simultaneously examined the bacterial and fungal biota and genotyped HPV in a sample of Puerto Rican women with different HPV profiles and degrees of cervical dysplasia. Their combined data suggest bacterial and fungal populations are related to the host epithelial microenvironment and could play roles in cervical dysplasia.

Public Health Impact Statement: No previous studies simultaneously assess HPV genotype diversity, bacterial and fungal communities associated with histopathologic features in the female genital tract. Additionally, no human microbiome studies on genital HPV infections had been conducted in Puerto Rico. This is the first study describing the normal cervicovaginal microbiota of Puerto Rican women and suggesting that the structure of the cervicovaginal bacterial biota correlates with neoplasia while the mycobiota correlates with both high-risk HPV infections and cervical intraepithelial neoplasia (CIN) severity. Potential fungal and bacterial biomarkers are suggested. This is an important step towards studying the biology of cervical neoplasia, offering opportunities to better develop therapeutic interventions that target the microbiota.

Godoy-Vitorino, F., Romaguera, J.E., Zhao, C., Vargas-Robles, D., Ortiz-Morales, G., Vázquez-Sánchez, F., Sanchez-Vázquez M, de la Garza-Casillas M, Martinez-Ferrer M, White JR, Bittinger K, Dominguez-Bello MG and Blaser MJ (2018). Cervicovaginal fungi and bacteria associated with cervical intraepithelial neoplasia and high-risk Human Papillomavirus infections in a Hispanic population. *Frontiers in Microbiology*, 23 October 2018, Vol 9, 2533, doi: 10.3389/fmicb.2018.02533

https://www.frontiersin.org/articles/10.3389/fmicb.2018.02533/full?&utm_source=Email_to_authors&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers+in+Microbiology&id=395352

<https://www.elnuevodia.com/ciencia/ciencia/nota/unestudioayudariaaladetecciontempranadelvph-2470535/>

Grant Support: NIGMS P20 GM103475, NIMHD 2U54MD007600, 2U54MD007587, S21M