

## **ABSTRACT**

**BACKGROUND:** Cervicitis is an inflammatory condition of the cervix associated with upper genital tract infection and reproductive complications. Although cervicitis can be caused by several known pathogens, the etiology frequently remains obscure. Here we investigate vaginal bacteria associated with bacterial vaginosis as potential causes of cervicitis. **METHODS:** Associations between vaginal bacteria and cervicitis were assessed in a retrospective case-control study of women attending a Seattle sexually transmitted disease clinic. Individual bacterial species were detected using 2 molecular methods: quantitative polymerase chain reaction (qPCR) and broad-range 16S rRNA gene PCR with pyrosequencing. The primary finding from this initial study was evaluated using qPCR in a second cohort of Kenyan women. **RESULTS:** The presence of *Mageeibacillus indolicus*, formerly BVAB3, in the cervix was associated with cervicitis, whereas the presence of *Lactobacillus jensenii* was inversely associated. Quantities of these bacteria did not differ between cervicitis cases and controls, although in a model inclusive of presence and abundance, *M. indolicus* remained significantly associated with cervicitis after adjustment for other cervicitis-causing pathogens. *M. indolicus* was not associated with cervicitis in our study of Kenyan women, possibly due to differences in the clinical definition of cervicitis. **CONCLUSIONS:** Colonization of the endocervix with *M. indolicus* may contribute to the clinical manifestations of cervicitis, but further study is needed to determine whether this finding is repeatable and applicable to diverse groups of women. Colonization of the cervix with *L. jensenii* could be a marker of health, perhaps reducing inflammation or inhibiting pathogenic infection.