Gardnerella vaginalis comprises three distinct genotypes of which only two produce sialidase

Santiago, Guido Lopes dos Santos; Deschaght, Pieter; Aila, El Nabil; Kiama, Teresa N.; Jefferson, Kimberly K.; Temmerman, M

Abstract:

OBJECTIVE: Sialidase and the presence of Gardnerella vaginalis have been proposed as biomarkers for bacterial vaginosis. Sialidase has been associated with adverse pregnancy outcome. We genotyped G. vaginalis isolates, assessed the presence and diversity of sialidase-coding genes, and determined the production of sialidase. STUDY DESIGN: One hundred thirty-four G vaginalis isolates were genotyped by random amplified polymorphic deoxyribonucleic acid (RAPD) and a selection of 29 isolates with amplified ribosomal deoxyribonucleic acid restriction analysis (ARDRA). A G vaginalis sialidase quantitative polymerase chain reaction was developed, and the sialidase production was assessed with the filter spot test. RESULTS: Three G vaginalis genotypes could be distinguished by both RAPD and ARDRA. Only 2 genotypes encoded and produced sialidase. CONCLUSION: Three genotypes exist among G vaginalis isolates, and there is a clear link between genotype and sialidase production. A possible link between sialidase production and (symptomatic) bacterial vaginosis and biofilm production can be hypothesized