

## **Differences in the Vaginal Microenvironment of Women Who Do and Women Who Do Not Wear Vaginal Pessaries**

**Authors:** Collins, SA, Mellen, CE, Beigi, RH, O'Sullivan, DM, Tulilkangas, PK

**Purpose and Rationale:** Women who wear pessaries commonly complain of bothersome vaginal discharge. Etiology of this discharge is lacking, but is often treated as bacterial vaginosis. The purpose of this study was to evaluate the differences between the vaginal microenvironment of postmenopausal women who wear pessaries and those who do not wear pessaries.

### **Research Questions:**

1. Are there differences in measures of microenvironment: pH, culture, or gram stain (Nugent's score) collected after pessary use is initiated, from the baseline measures?
2. Are there differences in patient's responses to pessary use/discharge questionnaire items after pessary use is initiated, from the baseline responses?

**Review of Literature:** Complaints of vaginal discharge and odor in women who wear pessaries are common and range from 13.5%-17.3% in recent studies. Only one study evaluated vaginal discharge and concluded that 32% of pessary wearers developed bacterial vaginosis compared with 10% of controls within 6 months of pessary use. Conclusions from this study make assumptions about normal vaginal flora found in reproductive-age women and may not be applicable to postmenopausal women in the urogynecology patient population.

**Methods/Procedures:** IRB approval was received. Postmenopausal women wearing pessary for greater than 3 months were enrolled into the pessary group (PESS). Women who never used a pessary, but intended to begin pessary use, were enrolled into the pessary naïve (NO PESS) group. None of the subjects was on oral or vaginal estrogen preparations. Vaginal swabs were taken from the vaginal vaults of the subjects by a single nurse examiner. Gram stain, Aerobic and anaerobic cultures were performed, and microscopy was performed on each sample by a single investigator. Gram stains were scored by Nugent's criteria. Subjects also completed brief questionnaires about their pessary use. Culture, Gram stain and microscopy results were compared between PESS and NO PESS groups. The same comparisons were performed between women in the PESS group who were bothered by vaginal discharge and those who were not.

**Results:** The most common aerobic and anaerobic organisms were the same in the PESS (n=50) and NO PESS (n=22) groups. None of the subjects in the NO PESS group were bothered by vaginal discharge. In the PESS group, the most common aerobic and anaerobic organisms were the same in the women who were bothered by vaginal discharge and those who were not. Women who were bothered by vaginal discharge were no more likely to meet Nugent's Criteria for bacterial vaginosis than women who were not bothered by vaginal discharge. There were no differences on vaginal microscopy between women who were and those who were not bothered by vaginal discharge in the PESS group.

**Discussion/Application:** Bothersome vaginal discharge in patients who wear pessaries is not due to a microbiologic disturbance in the vaginal environment and cannot be reliably described by criteria used to diagnose bacterial vaginosis, which is a disorder of premenopausal women. The NO PESS group will be followed prospectively from pessary insertion, at 2 weeks, 3 months and 6 months for analysis of vaginal microenvironment.