Accuracy of Self-collected Vaginal Swabs in the Diagnosis of Bacterial Vaginosis, Vaginal Candidiasis, and Trichomoniasis

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Accuracy of self-collected vaginal swabs in the diagnosis of bacterial vaginosis, vaginal candidiasis, and trichomoniasis

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Mentor: Linda Samia, PhD, RN, Associate Professor of Nursing

Purpose
To answer the clinical PICOT question:
In patients who need vaginal swabs to diagnose bacterial vaginosis (BV), vaginal candidiasis ("yeast infections"), and trichomoniasis, are self-collected swabs as accurate as provider-collected swabs obtained during a speculum exam?

Background
- Vaginitis, or inflammation of the vagina, is the most common gynecological problem seen in primary care. It is estimated that it accounts for about 10 million primary care visits each year8
- The most common causes of vaginitis - accounting for up to 90% of cases - are bacterial vaginosis (BV), vaginal candidiasis ("yeast infections"), and trichomoniasis9,7

Evidence Appraisal

- Search of CINAL, Cochrane, and Google Scholar databases using the keywords self-collected, provider-collected, vaginal specimen OR vaginal swabs, reliability, bacterial vaginosis, vaginal candidiasis, and trichomoniasis yielded multiple case control studies published in English within the past 10 years
- Expanding the criteria to the past 20 years yielded a seminal study from 1997
- The overall sample was comprised of eight studies, all of which represent cohort studies with high quality evidence
- The studies were appraised by a single reviewer using validated tools and were determined to be of high quality

Evidence Synthesis
- In sexually-active patients 14 years or older living in the US, self-collected vaginal swabs were as accurate as clinician-collected swabs at detecting vaginal candidiasis and BV infections; with κ ≥ 0.84 for BV and κ ≥ 0.88 for VVC indicating almost perfect agreement2,3,4,5,6,7,8
- In patient populations with low literacy levels in India, self-swabs showed moderate agreement with provider-collected swabs for the diagnosis of BV, κ ≥ 0.488
- There was high agreement between self and clinician-collected vaginal specimens in diagnosis of trichomoniasis, in sexually active patients κ ≥ 0.871,5,7
- Self-swabs used for STI screenings were as accurate as clinician-collected swabs used for STI screenings8
- Patient reported self-collection of vaginal swabs to be easy to obtain
- Symptoms were found to be a poor indicator of underlying infection6
- A self-taken swab alone is not adequate to diagnose etiology of vaginitis, a history physical exam may also be needed10

Translation to Practice
- Educate providers on evidence of reliability of self-swabs and appropriate clinical situations for their use
- Train all clinical staff regarding patient education and the appropriate procedure for collecting self swabs
- Provide educational materials and instructions for self-swabs to patients

Proposed Evaluation

Complete a chart audit for the past 6 months to assess the number of patients who were tested for BV, yeast infections, and trichomoniasis and quantify outcomes of the testing. Track BV, yeast infections, and trichomoniasis testing over the next 6 months, the number of patients who opt for self-swabs, and the results.

Conclusion
- Self-taken vaginal swabs are as accurate and reliable as provider-collected swabs in diagnosing BV, yeast infections, and trichomoniasis in sexually active patients of the age of thirteen2,3,4,5,6,7,8
- Vaginal swabs self-collected for the screening of chlamydia and gonorrhoea may be an appropriate alternative to provider-collected swabs in the diagnosis of trichomoniasis.1 Indicating that testing could be done during routine STI screening, which has important implications for low-access areas.1
- With proper instruction, self-collection of vaginal swabs may be an easy experience for patients.
- When deciding which patients to offer self-collected swabbing to, providers should keep in mind that symptoms are a poor indicator of underlying infection and self-swabs do not replace a physical exam.2,10
- Further research is needed to determine the accuracy of self-swabbing in non-sexually active patients.

References

Additional references not listed above...

Figure 1. Clue cells (400x). Vaginal epithelial cells with borders obscured by adherent cocciococci seen on saline wet-mount preparation.}

Bacterial Vaginosis | Trichomoniasis | Vaginal Candidiasis
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Figure 2. Trichomonas vaginalis (400x). Motile organisms with flagella slightly larger than a leucocyte may be seen (arrow).

Figure 3. Candida albicans (400x). Budding yeast visible (arrow).

Figure 4. Microscopic examination of vaginal swab (400x). Bacterial vaginosis with线索 (arrow).