Is self-swabbing for STIs a good idea?

It is. There is no down side to self-collection, this study suggests.

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PRACTICE CHANGER

Ask women who are at risk for sexually transmitted infections (STIs) to self-swab for chlamydia and gonorrhea testing; self-collection of vulvovaginal swabs with nucleic acid amplification testing (NAAT) has excellent sensitivity in women with and without symptoms.[1,2]

STRENGTH OF RECOMMENDATION

B: Based on a prospective diagnostic cohort study.

Schoeman SA, Stewart CM, Booth RA, et al. Assessment of best single sample for finding chlamydia in women with and without symptoms: a diagnostic test study. *BMJ*. 2012;345:e8013.

Stewart CM, Schoeman SA, Booth RA, et al. Assessment of self taken swabs versus clinician taken swab cultures for diagnosing gonorrhoea in women: single centre, diagnostic accuracy study. *BMJ*. 2012;345:e8107.

ILLUSTRATIVE CASE

An 18-year-old woman comes to your office requesting testing for STIs. She has no symptoms. What is the best way to collect samples for chlamydia and gonorrhea testing?

Despite public health efforts, chlamydia and gonorrhea remain significant health problems, with more than 1.4 million cases of chlamydia and 321,849 cases of gonorrhea reported in the United States in 2011.[3] Both can have devastating effects on reproduction, even in women who are asymptomatic.

Annual testing is recommended for women at risk

According to the Centers for Disease Control and Prevention (CDC), most reported cases of chlamydia (70%) and gonorrhea (62%) occur in men and women between the ages of 15 and 24 years.[3] Both the CDC and the US Preventive Services Task Force recommend annual chlamydia screening for all sexually active women younger than 25, and for older women with risk factors, including having multiple sex partners and living in communities with a high burden of disease.[4,5] Annual gonorrhea screening is recommended for sexually active women with risk factors, as well.[4,5]

How best to test? A number of unknowns

NAAT is the most sensitive test for detection of chlamydia and gonorrhea, but other questions about how best to screen for STIs remain.[1,6] It has not been clear whether self-collected vulvovaginal swabs are equivalent to clinician-collected urethral or endocervical swabs for the detection of gonorrhea, or whether NAAT testing of the self-collected swabs or culture of the clinician-collected swabs is a more sensitive test for gonorrhea.

While some studies have found self-collected vulvovaginal samples to be as sensitive as clinician-collected endocervical samples for the diagnosis of chlamydia and gonorrhea, samples are still often collected by clinicians.[7,8] Collecting endocervical swabs is uncomfortable for patients and time consuming for clinicians, and evidence suggests that patients prefer noninvasive sampling.[9]

CONTINUED

Self-collected vulvovaginal swabs are the sample of choice for both chlamydia and gonorrhea testing in women, regardless of whether patients have symptoms.

STUDY SUMMARY

Self-collected samples are highly sensitive

This study was designed to compare the sensitivity and specificity of self-collected vulvovaginal swabs vs clinician-collected swabs for chlamydia and gonorrhea, both in asymptomatic women and women with symptoms of an STI. Test methods were also assessed for gonorrhea, comparing detection rates of self-swabs tested with NAAT vs the culture of clinician-collected urethral and endocervical samples.

The researchers evaluated a total of 3973 women, ages 16 to 59 years, who sought care at a single sexual health center in the United Kingdom. The average age was 25 years; 37% of the participants reported a prior STI, and 42% had at least one symptom suggestive of an STI. Exclusion criteria included having taken an antibiotic in the preceding 28 days and being unable or unwilling to take a vulvovaginal swab or undergo clinician examination and sample collection.

The women performed vulvovaginal swabs for NAAT (Aptima Combo-2, Hologic GenProbe, San Diego, Calif) prior to a speculum exam; endocervical swab for both NAAT and culture and a urethral swab for culture were collected by the clinician. All the swabs sent for NAAT were tested for chlamydia and gonorrhea, and cultures were performed to detect gonorrhea.

Chlamydia: Vulvovaginal swabs have higher detection rates

Of the 3867 participants with complete results, 10.2% were infected with chlamydia. Self-collected vulvovaginal swabs were significantly more sensitive than endocervical swabs (97% vs 88%; $P<.00001$) and had equal specificity (99.9% vs 100%). In women with symptoms of an STI, the sensitivity was 97% vs 88% ($P<.0008$); in those with no symptoms, the sensitivity was 97% vs 89% ($P<.002$).

Gonorrhea: Self-collection, NAAT yield better results

Gonorrhea was found in 2.5% of the 3859 women with complete results for testing of this STI. Self-collected swabs and physician-collected swabs analyzed by NAAT both had excellent sensitivity (99% vs 96%; $P=.375$). But self-collected samples that underwent NAAT were significantly more sensitive than clinician-collected urethral and endocervical samples that were cultured (99% vs 81%; $P<.001$). The number needed to test by self-collection for NAAT (compared with clinician-collected culture) to detect one additional case of gonorrhea was 5.

In women with symptoms suggestive of infection, the NAAT assays—both physician- and self-collected—were equivalent and were more sensitive than gonorrhea culture ($P=.004$). In asymptomatic women, 1.8% of whom had gonorrhea, the vulvovaginal swab sent for NAAT was more sensitive than culture (98% vs 78%; $P=0.008$) and equivalent to the endocervical swab for NAAT (90%).

The bottom line: Self-collected vulvovaginal swabs are the sample of choice for both chlamydia and gonorrhea testing in women, regardless of whether they have symptoms. When a clinical examination is needed, either the clinician or the patient can collect a vulvovaginal swab.

WHAT'S NEW?

Endocervical samples, cultures have lower detection rates

In this study, endocervical samples collected by the physician rather than self-collected vulvovaginal samples would have missed 9% (one in 11) of chlamydial infections in women with symptoms of an STI. Vulvovaginal swabs and endocervical swabs have equal sensitivity for the diagnosis of gonorrhea when NAAT is used, but culture would have missed one in 5 gonorrhea infections (in women with and without symptoms).

CAVEATS

NAAT is costly, and does not test for drug sensitivity

Although NAAT has replaced cell culture methodology as the gold standard for gonorrhea and chlamydia diagnosis, it is potentially costly if not readily available in your practice setting. What's more, NAAT does not allow testing for antibiotic sensitivity, which is particularly relevant with increasing resistance of gonorrhea to multiple antibiotics. In addi-

tion, it's unclear whether these results would apply to all NAAT assays or just the one used in this study.

These studies examine sensitivity and specificity of gonorrhea and chlamydia testing in a high-risk population—women who were seeking care in a sexual health center. Your patient population may be lower risk, which will lower the prevalence of STIs and lower the positive predictive value of NAAT. A positive NAAT test for an STI should be followed by a confirmation NAAT in low-risk populations.

CHALLENGES TO IMPLEMENTATION

Reconsidering the way we practice

Most family physicians are accustomed to performing a full examination on patients with a suspected STI, and changing the flow of the office visit may be difficult. And, to implement this practice changer properly, it would be necessary to provide patient instruction in self-collection technique.

Also, making this change could be costly if you do not have this particular NAAT available. Once implemented, however, self-collection with NAAT will likely save time and be more comfortable for your patients. It will also provide a higher sensitivity in detecting chlamydia infections and equal sensitivity in detecting gonorrhea compared with physician-collected NAAT testing. JFP

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