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Trichomonas vaginalis infection

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Keywords: *Trichomonas vaginalis*

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The organism *Trichomonas vaginalis* is a sexually transmissible protozoal parasite. It is the commonest curable sexually transmitted infection (STI); The World Health Organization estimates that about 170 million new cases occur annually.¹ It is a common cause of vaginal discharge in women, in whom it may also cause vulval irritation and inflammation, dysuria, and inflammation of the exo-cervix. It has been associated with dysuria and urethral discharge in men but asymptomatic infection also occurs in both sexes. *T vaginalis* infection is associated with low socioeconomic status, and is more prevalent in developing than in developed countries.^{2,3} Opinions vary concerning whether or not *T vaginalis* can be transmitted by non-sexual contact.^{4,5} A morphologically similar organism, *Pentatrichomonas hominis*, is a commensal of the human large intestine, but conventional wisdom has it that this organism does not multiply in the human reproductive tract.

Recommended tests

Other Sections ▼

Microscopy of a wet mount preparation is the most commonly used diagnostic test for *T vaginalis* infection. Characteristic motile flagellated protozoa are readily seen. Microscopy for *T vaginalis* should be performed as soon as possible after the sample is taken as motility diminishes with time. Wet mount microscopy is approximately 70% sensitive compared to culture in women, and significantly less sensitive in men.^{6,7,8} At present, culture techniques are still regarded as the most sensitive and specific; they provide the “gold standard” against which other methods are judged (evidence level: III, recommendation grade B).

Culture media vary in efficiency but Diamond's TYM medium⁹ (sometimes with minor modifications) is among the best.^{10,11} Most tubes will be positive within 48 hours but should be kept for 7–10 days before being finally discarded. A very convenient, but expensive, way of culturing specimens is the InPouch system, which appears to be at least as sensitive as conventional tubed media^{12,13} (evidence level III, recommendation grade B).

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PubMed articles by these authors

- ▶ Mabey, D.
- ▶ Ackers, J.
- ▶ Adu-Sarkodie, Y.

PubMed related articles

- ▶ One-tube, nested-PCR assay for the detection of *Trichomonas vaginalis* in vaginal discharges. [Ann Trop Med Parasitol. 1997]
 - ▶ Comparison of latex agglutination, wet preparation, and culture for the detection of *Trichomonas vaginalis*. [Sex Transm Infect. 2004]
 - ▶ Diagnosis of symptomatic and asymptomatic *Trichomonas vaginalis* infection by applying oncochromatic staining. [J Egypt Soc Parasitol. 1999]
 - ▶ **Review** Systematic review of diagnostic tests for vaginal trichomoniasis. [Infect Dis Obstet Gynecol. 2000]
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- ▶ New rapid latex agglutination test for diagnosing *Trichomonas vaginalis* infection. [J Clin Pathol. 1988]
- ▶ Comparison of latex agglutination, wet preparation, and

A latex agglutination test that detects *T vaginalis* antigen was described some years ago. This rapid and simple bedside test, which does not require electricity or special equipment, has been reported to have sensitivities of 95% and 98.8% and specificities of 99% and 92.1% compared to culture for the diagnosis of *T vaginalis* infection in women.^{14,15} This diagnostic test is available in kit form (TVlatex; Kalon Biological Ltd, Ash Vale, GU12 5QJ, UK) (evidence level III, recommendation grade B).

More recently, several protocols have been described for the detection of *T vaginalis* DNA in clinical samples using the polymerase chain reaction (PCR).^{16,17,18,19} Some of these assays appear to be more sensitive than culture although, as with PCR assays for *Chlamydia trachomatis* infection when they were first introduced, it is not immediately apparent whether samples positive by PCR and negative by culture represent false negatives by culture, or false positives by PCR. No PCR assay for *T vaginalis* is currently on the market in the United Kingdom (evidence level III, recommendation grade B).

Who should be tested?

Other Sections ▼

- Until recently *T vaginalis* has not been considered an important pathogen since, unlike other STIs, it was not believed to cause serious sequelae. Its importance is now being reassessed in the light of recent evidence that it is associated with adverse pregnancy outcome and facilitates the sexual transmission of HIV infection.^{20,21,22} However further research is needed to confirm these associations and to prove that the association is causal. Moreover recent trials have found that treatment of *T vaginalis* infection in pregnancy does not improve pregnancy outcome, and may be harmful.^{23,24,25} Screening of asymptomatic individuals for *T vaginalis* infection is therefore not currently recommended (evidence level I, II, recommendation grade A).
- Women attending clinics with a complaint of vaginal discharge should be tested for *T vaginalis* infection (evidence level III, recommendation grade B). It is generally recommended that sexual partners of infected women should be treated epidemiologically^{26,27,28,29} (evidence level 1b, recommendation grade A). Testing of male partners could in theory lead to further contact tracing in those who test positive (evidence level IV, recommendation grade C).
- Men with urethral symptoms which persist after infection with *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and *Mycoplasma genitalium* have been excluded or treated should be tested for *T vaginalis* infection^{30,31} (evidence level III, recommendation grade B).
- Test of cure is only recommended in those whose symptoms persist after treatment (evidence level IV, recommendation grade C).

Recommended sites for testing

Other Sections ▼

In women, a swab should be taken from the posterior fornix at the time of speculum examination (evidence level III, recommendation grade B). Self administered vaginal swabs have been used in many recent studies, and are likely to give equivalent results³² (evidence level III, recommendation grade B). First catch urine (FCU) specimens, with or without centrifugation, have also been tested in women, but the sensitivity is less than that achieved with vaginal swabs (evidence level III, recommendation grade B).

In men, urethral swabs or FCU samples are recommended. The sensitivity of FCU can be improved by testing a cell pellet after centrifugation. Sensitivity can be

culture for the detection of Trichon [Sex Transm Infect. 2004]

- ▶ 18S ribosomal DNA-based PCR for diagnosis of *Trichomonas vaginalis*. [J Clin Microbiol. 2000]
- ▶ Diagnosis of *Trichomonas vaginalis* infection by PCR using vaginal swab samples. [J Clin Microbiol. 1998]
- ▶ Colorimetric one-tube nested PCR for detection of *Trichomonas vaginalis* in vaginal discharge [J Clin Microbiol. 1997]
- ▶ Comparison of culture and different PCR assays for detection of *Trichomonas vaginalis* in self cc [Sex Transm Infect. 2003]

- ▶ A self-administered technique for the detection of sexually transmitted diseases in remote communities [J Infect Dis. 1997]

- ▶ Risk assessment and laboratory diagnosis of trichomoniasis in men. [J Infect Dis. 1992]
- ▶ Prevalence of *Trichomonas vaginalis* in men at high risk for sexually transmitted diseases. [Sex Transm Dis. 1991]

improved by testing both a swab and a FCU^{33,34} (evidence level III, recommendation grade B). Swabs from the subpreputial space may also be tested, but this method of specimen collection has not been well validated (evidence level IV, recommendation grade C).

Factors that alter tests recommended or sites tested

None.

Applicability/resource requirements

The “wet prep” microscopy has little associated cost. Kalon latex agglutination costs approximately £1 (€1.48) and the InPouch culture approximately £2.

Audit standard

Women attending clinics with a complaint of vaginal discharge should be tested for *T vaginalis* infection using a recommended test—target 95%.

Search strategy

A PubMed search of the English language literature was conducted up to December 2004, using the keywords “Trichomonas vaginalis” and “trichomoniasis”. Personal libraries and the abstracts of recent meetings of the International Society for STD Research were also scrutinised.

Abbreviations

FCU - first catch urine

PCR - polymerase chain reaction

STI - sexually transmitted infections

Footnotes

Conflict of interest: none declared.

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