# United Kingdom National Guideline on the Management of Trichomonas vaginalis (2007)

## Clinical Effectiveness Group, British Association of Sexual Health and HIV

Scope and Purpose

The main objective is to assist practitioners in managing men and women diagnosed with *Trichomonas vaginalis*. The stakeholders are members of the CEG and BASHH who have had the opportunity to comment on the guideline.

This guideline offers recommendations on the diagnostic tests, treatment regimens and health promotion principles needed for the effective management of Trichomonas vaginalis, covering, the management of the initial presentation, as well as how to prevent transmission and future infection.
It is aimed primarily at people aged 16 years or older (see specific guidelines for those under 16) presenting to health care professionals, working in departments offering level 3 care in STI management (see national strategy) within the United Kingdom. However, the principles of the recommendations should be adopted across all levels (levels 1 and 2 may need to develop, where appropriate, local care pathways).

Aetiology

Causative organism

*Trichomonas vaginalis* is a flagellated protozoan. In women the organism is found in the vagina, urethra and paraurethral glands. While the urinary tract is the sole site of infection in less than 5% of cases, urethral infection is present in 90% of episodes. In men infection is usually of the urethra, although trichomonads have been isolated from the sub preputial sac and lesions of the penis.

Transmission

In adults transmission is almost exclusively sexually transmitted. Due to site specificity, infection can only follow intravaginal or intraurethral inoculation of the organism.

Clinical Features

Symptoms

Females (Evidence level III) [1,2]
- 10 - 50% are asymptomatic.
- The commonest symptoms include vaginal discharge, vulval itching, dysuria, or offensive odour.
- Occasionally the presenting complaint is of low abdominal discomfort.

Males (Evidence level III) [3]
- 15 to 50% of men with *T. vaginalis* are asymptomatic and usually present as sexual partners of infected women.
- The commonest presentation is with urethral discharge and/or dysuria, indistinguishable from those caused by urethritis of other aetiologies. Other symptoms include urethral irritation and frequency.

- Rarely the patient may complain of a copious purulent urethral discharge, or complications such as prostatitis.

Signs

Females (Evidence level III) [1,2]
- Vaginal discharge in up to 70% - varying in consistency from thin and scanty to profuse and thick; the classical discharge of frothy yellow occurs in 10-30% of women.
- Vulvitis and vaginitis are associated with trichomoniasis.
- Approximately 2% of patients will have strawberry cervix appearance to the naked eye. Higher rates are seen on colposcopic examination.
- 5-15% of women will have no abnormalities on examination.

Males (Evidence level III) [3]
- Urethral discharge (50-60% men)- usually small or moderate amounts only.
- No signs, even in the presence of symptoms suggesting urethritis.
- Rarely balanoposthitis.

Complications
There is increasing evidence that *T. vaginalis* infection can have a detrimental outcome on pregnancy and is associated with preterm delivery and low birth weight. (Evidence level 111) [4,5]. 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 TV infection in pregnancy does not improve pregnancy outcome, and may be harmful [6-8]. Screening of asymptomatic individuals for *T. vaginalis* infection is therefore not currently recommended**.** *(Evidence Level I & II, Grade A)*

There is evidence that trichomonas infection may enhance HIV transmission[9,10].

Diagnosis

Laboratory investigations

Females
Direct observation by wet mount or acridine orange staining is approximately 70% sensitive compared to culture in females, but will only detect about 30% cases in males [11-13]. Microscopy for *T. vaginalis* should be performed as soon as possible after the sample is taken as motility diminishes with time.

Culture techniques are still regarded as the most sensitive and specific; they provide the "gold standard" against which other methods are judged. *Level of evidence: III, B.* Culture media vary in efficiency but Diamond's TYM medium (or modified version) is amongst the best [14,15].

Polymerase chain reaction based diagnostic tests have recently been developed and sensitivities and specificities approaching 100% have been reported [16,17]. No PCR assay for *T. vaginalis* is currently on the market in the UK. *Level of evidence: III, B*

Trichomonads are sometimes reported on cervical cytology, however a

meta-analysis has shown that while it has good specificity the weighted mean sensitivity was only 58% [18]. In such cases it is prudent to confirm the diagnosis, preferably by culture of vaginal secretions. (Evidence level Ia, Grade A).

Sites sampled

Females(Evidence level III, Grade B) [1,2,11,12],

- Swab taken from the posterior fornix at the time of speculum examination.
- Self-administered vaginal swabs have been used in many recent studies, and are likely to give equivalent results [19,20].

Males (Evidence level III,B) [13]

- Urethral culture or culture of first-void urine will diagnose 60-80% cases, sampling both sites simultaneously will significantly increase the diagnostic rate.

## Management

### General Advice

Sexual partner(s) should be treated simultaneously. Patients should be advised to avoid sexual intercourse (including oral sex) until they and their partner(s) have completed treatment and follow-up**.**

Patients should be given a detailed explanation of their condition with particular emphasis on the long-term implications for the health of themselves and their partner(s). This should be reinforced by giving them clear and accurate written information.

### Further Investigations

Screening for coexistent sexually transmitted infections should be undertaken in both men and women.

### Treatment [21-23]

The frequency of infection of the urethra and paraurethral glands in females dictates that systemic chemotherapy be given to effect a permanent cure. Most strains of *T. vaginalis* are highly susceptible to metronidazole and related drugs (approx. 95% cure rate). There is a spontaneous cure rate in the order of 20-25%.

Recommended regimes (Evidence level II,b)

- Metronidazole 2g orally in a single dose

or

- Metronidazole 400 – 500mg twice daily for 5 - 7 days

The single dose has the advantage of improved compliance and being cheaper, however there is some evidence to suggest that the failure rate is higher, especially if partners are not treated concurrently.

### Alternative regimens

Tinidazole 2g orally in a single dose

Tinidazole has similar activity to metronidazole but is more expensive.

Caution
Patients should be advised not to take alcohol for the duration of treatment and for at least 48 hours afterwards because of the possibility of a disulfiram-like (Antabuse® effect) reaction.

Allergy
There is no effective alternative to 5 nitroimidazole compounds. In cases of true allergy, desensitization to metronidazole has been described [24,25] and could be considered.

Pregnancy and breast feeding
Meta-analyses have concluded that there is no evidence of teratogenicity from the use of metronidazole in women during the first trimester of pregnancy (Evidence level Ia) [26-28]. The British National Formulary advises against high dose regimens in pregnancy.

Metronidazole enters breast milk and may affect its taste. The manufacturers recommend avoiding high doses if breastfeeding.

Treatment failure (Evidence level IV or anecdotal)
- Check compliance and exclude vomiting of metronidazole
- Check possibility of re-infection
- Check partner(s) has been treated

1. Patients who fail to respond to first course of treatment often respond to a repeat course of standard treatment [29].

If this fails and above excluded, the treatment of patients with metronidazole-refractory vaginal trichomoniasis constitutes a major therapeutic challenge, and treatment options are extremely limited. Sensitivity testing is currently unavailable.

2. It has been suggested that some organisms present in the vagina may interact to reduce the effectiveness of nitroimidazoles and that use of a broad spectrum antibiotic such as with erythromycin or amoxicillin before retreating with MTZ will improve the chances of a cure.

3. Higher doses of metronidazole [29]

    a. Metronidazole 400mg tds with metronidazole 1g PR daily for 7 days or longer (some clinicians have added zinc sulphate 1% vaginal douches or vaginal washes with 3% acetic acid to the regimen)
    b. Metronidazole 2g daily for 3 days to 5 days
    c. High dose intravenous metronidazole

4. High doses of oral tinidazole e.g. 2g twice daily for 2 weeks, with or without intravaginal tinidazole

Comparison of in vitro activities of tinidazole and metronidazole against *Trichomonas vaginalis* isolates clinically resistant to metronidazole found increased metronidazole resistance correlated with increased tinidazole resistance however the minimal lethal concentrations (MLCs) of tinidazole were significantly lower than MLCs of metronidazole [30]. In clinical practice a cure rate of 92% (22 /24) was achieved in patients with refractory

trichomoniasis treated with high doses of oral and vaginal tinidazole and this has been supported by other smaller studies [31,32].

There are anecdotal reports of treatment success with the following regimens, most of which are not readily available in the UK. It should be noted that most of these are based on success in one or two patients, each of whom had previously received a wide variety of treatments. The definition of cure was variable and microbiological follow up was not available in all cases. Additionally for each case report of cure with specific treatment, there are reports of failure with the same agents. (Evidence level IV or anecdotal).

- 6% Nonoxynol–9 pessaries nightly for 2 weeks and then once weekly for up to 7 months
- Acetarsol pessaries 2 x 250mg nocte for 2 weeks
- Paromomycin sulphate 250mg pessaries once or twice daily for 2 weeks

Management of sexual partners

Current partners should be screened for the full range of STIs and treated for TV irrespective of the results of investigations. [33,34] (Evidence level Ib A)

- In a male contact of TV, found to have NGU on screening, it is reasonable to treat initially for TV and repeat the urethral smear before treating additionally for NGU. (Level III) [35]

TV in children [36]

Trichomonas may be acquired perinatally and occurs in about 5% of babies born to infected mothers. Infection in prepubescent girls is unusual. Infection beyond the first year of life should suggest sexual contact (although other modes of transmission are also postulated) and the child should be appropriately evaluated.

Follow up

Tests of cure are only recommended if the patient remains symptomatic following treatment, or if symptoms recur. **(**Evidence level: IV, C)

“The recommendations in this guideline may not be appropriate for use in all clinical situations. Decisions to follow these recommendations must be based on the professional judgement of the clinician and consideration of individual patient circumstances and available resources.”

“All possible care has been undertaken to ensure the publication of the correct dosage of medication and route of administration. However, it remains the responsibility of the prescribing physician to ensure the accuracy and appropriateness of the medication they prescribe.”

Auditable Outcome Measures

- All patients found to have *T. vaginalis* infection should receive treatment with metronidazole, either as a single dose of 2g or 400mg twice daily for at least 5 days
- Contact tracing should be undertaken and all resulting sexual contacts attending should be treated *for T. vaginalis,* regardless of the results of their investigations
- At least 60% of patients should have one or more traceable contacts treated within one month
- 100% of women found to have T vaginalis on cervical cytology should be

offered confirmation of the diagnosis confirmed with a vaginal swab before treatment , and offered screening for other STIs.

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Editorial Independence
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Declaration of Personal Interests
None

Evidence Base
Medline search 1966-2006, using heading *Trichomonas vaginalis*, trichomoniasis limited to "human" and "english". Medline search 1966-2006, using heading *Trichomonas vaginalis*, trichomoniasis, and resistance, limited to "human" and "english". Cochrane database on treatment of *Trichomonas vaginalis* in women. 2006 US CDC guidelines for the treatment of Sexually Transmitted Diseases, BNF October 2006

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