2001 National Guideline on the Management of Trichomonas vaginalis

Clinical Effectiveness Group (Association for Genitourinary Medicine and the Medical Society for the Study of Venereal Diseases)

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 trichomonas 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 III) [4],[5] There is evidence that trichomonas infection may enhance HIV transmission[6].
**Diagnosis**

**Females (Evidence level III) [1],[2],[7],[8],[9]**
- Direct observation by a wet smear or acridine orange stained slide from the posterior fornix will diagnose 40 - 80% cases.
- Culture media are available and in females up to 95% of cases can be diagnosed by cultures.
- Trichomonads are sometimes reported on cervical cytology, where the sensitivity is approx. 60 - 80%, but there is a false positive rate of about 30%. In such cases it is prudent to confirm the diagnosis by direct observation of vaginal secretions and preferably by culture, if available.

**Males (Evidence level III) [10]**
- Direct observation by wet mount or staining will only diagnose infection in about 30% of cases.
- Urethral culture or culture of first-void urine will diagnose 60-80% cases, sampling both sites simultaneously will significantly increase the diagnostic rate. External genital sampling will identify a small number of additional cases.

Polymerase chain reaction based diagnostic tests have recently been developed and sensitivities and specificities approaching 100% have been reported. [11][12]

**Management**

**General Advice**
Sexual partner(s) should be treated simultaneously, and sexual abstinence advised until treatment is completed.

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

**Treatment** [13],[14],[15]
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 Ib)
- 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.

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[16][17]**
There is no effective alternative to imidazole compounds. In cases of true allergy, desensitization to metronidazole has been described and could be considered.

**Treatment failure**
- Check compliance and exclude vomiting of MTZ
- Check possibility of re-infection
- Check partner(s) has been treated
- Patients who fail to respond to first course of treatment often respond to a repeat course of standard treatment.
  - If this fails and above excluded then:
(Evidence level IV or anecdotal)

- Some organisms present in the vagina may interact and reduce effectiveness of MTZ, so consider a HVS or treat empirically with erythromycin or amoxicillin to reduce B-haemolytic streptococci before retreating with MTZ.
- If above unlikely and persistent treatment failure the likelihood is that the organism is one that has evolved with the capability to exist under aerobic conditions. In these situations there is no effective recommended treatment. Sensitivity testing is currently unavailable. Reported successful treatments include:
  - Metronidazole 400mg tds with metronidazole 1g PR or 1g PV (unlicensed) 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).
  - High dose oral and intravaginal tinidazole
  - Metronidazole 2g daily for 3 days to 5 days,
  - High dose intravenous metronidazole
  - 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

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.

Pregnancy and breast feeding

- Metronidazole is relatively contraindicated in the first trimester of pregnancy and its safety in pregnancy is not established, although the published data suggest no association with increased teratogenic risk (Evidence level 1) [18],[19],[20]. In symptomatic disease in early pregnancy local therapies ( clotrimazole pessaries 100mg daily for 7 days or Aci-jel) could be used, but systemic treatment will ultimately be necessary to eradicate the infection.
- The manufacturers recommend that high single dose regimes are avoided during pregnancy and breast-feeding.

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.
- 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) [21]

Follow up
Tests of cure should be undertaken if the patient remains symptomatic following treatment, or if symptoms recur.

TV in children [22]
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.

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 contacts treated within one month
- 75% of women found to have T vaginalis on cervical cytology should have the diagnosis confirmed with a vaginal swab before treatment.
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Conflicts of Interest
None

Evidence Base

References
