Management of Genital Ulcers and Discharges (Summary Booklet)

MOH Clinical Practice Guidelines 1/2009
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Management of genital ulcers

D It is recommended that the following diagnostic approach be taken in any patient with genital ulcers or discharges (pg 27):

A. **Patient history:**
   1. **Lesion history:** prodrome, initial presentation (especially presence of vesicles), duration of lesion, pain, symptoms of urethritis, other systemic symptoms, use of systemic or topical remedies, any history of similar symptoms in the past or partners with similar symptoms.
   2. **Medical history:** HIV status, skin conditions, drug allergies, and medications.
   3. **Sexual history:** gender of partners, number of partners, venue for meeting partners, commercial sex exposure, partners with symptoms or signs, partners with known HSV or recent syphilis diagnosis.
   4. **Travel history:** geographical area where sexual intercourse has taken place.

B. **Physical exam:**
   1. **Lesion:** examine for appearance, distribution, number, size, induration, depth, and tenderness.
   2. **Genital exam:** examine genital and perianal area for other lesions.
   3. **Lymph node(s):** note number and location of enlarged nodes, size, tenderness, presence of bubo.
   4. **General exam:** thorough examination of oral cavity and skin of torso, palms and soles. In patients with syphilis, this would include an examination of the cardiovascular and neurological systems.

**Grade D, Level 4**

A A diagnosis based only on the patient’s medical history and physical examination frequently may be inaccurate. Ideally, all patients who have genital ulcers should be evaluated with a serologic test for syphilis and a diagnostic evaluation for genital herpes; if chancroid is suspected, the patient should be referred to a specialist for evaluation and a test for *Haemophilus ducreyi* (pg 29).

**Grade A, Level 1+**
HIV and serologic testing for syphilis should be performed on all patients who have STIs presenting with genital ulcers, as well as tests for herpes simplex infection where appropriate. Locally, genital herpes and syphilis are the two most likely infective etiologies. Non-infective causes may need to be considered (pg 29).

The clinician should treat for the diagnosis considered most likely, on the basis of clinical presentation and epidemiologic circumstances. In some instances, treatment must be initiated for additional conditions because of diagnostic uncertainty (pg 29).

Successful management of STI-associated syndromes requires that staff are respectful of patients and are not judgmental. Examination must be done in appropriate surroundings where privacy can be ensured and confidentiality guaranteed. Patients should be educated and counseled on their condition as well as safer sex (pg 29).

Management of herpes simplex virus (HSV) infection

In performing serology for HSV infection, assays that detect the type-specific glycoproteins gG1 (HSV 1) and gG2 (HSV 2) should be used (pg 31).

Treatment of first episode genital herpes (pg 32)

1. Acyclovir 200 mg orally 5 times daily for 5 to 10 days. 
   Grade A, Level 1++

   OR

2. Acyclovir 400 mg orally tid for 5 to 10 days. 
   Grade A, Level 1++

   OR

3. Valacyclovir 500 mg/1g orally bid for 5 to 10 days. 
   Grade A, Level 1++

   OR

4. Famciclovir 250 mg orally tid for 5 to 10 days. 
   Grade B, Level 2++
For episodic treatment of recurrent herpes, the patient should be provided with a supply of drug or a prescription for the medication with instructions to self-initiate treatment immediately when symptoms begin (pg 32).

**Treatment of recurrent genital herpes (pg 32)**

1. **A** Acyclovir 200 mg orally 5 times daily or 400 mg orally tid *or* 800 mg orally bid for 5 days.

   Grade A, Level 1++

   OR

2. **A** Acyclovir 800 mg tid orally for 2 days.

   Grade A, Level 1++

   OR

3. **A** Valacyclovir 500 mg orally bid *or* 1000 mg orally once a day for 5 days.

   Grade A, Level 1++

   OR

4. **A** Valacyclovir 500 mg bid for 3 days.

   Grade A, Level 1++

   OR

5. **A** Famiclovir 125 mg orally bid for 5 days.

   Grade A, Level 1++

   OR

6. **A** Famiclovir 1 g bid orally for 1 day.

   Grade A, Level 1++

Suppressive therapy reduces the frequency of genital herpes recurrences and may be considered in patients who have frequent recurrences (i.e. 6 or more recurrences per year) (pg 33).

**Suppressive treatment of recurrent genital herpes (pg 33)**

1. **A** Acyclovir 400 mg orally bid.

   Grade A, Level 1+

   OR

2. **A** Valacyclovir 500 mg orally od.

   Grade A, Level 1+
3. A Valacyclovir 1000 mg orally od (for > 10 recurrences in 1 year).

OR

4. A Famiclovir 250 mg orally bid.

C Physicians should stop suppressive treatment of genital herpes after 9 to 12 months to see if recurrence occurs and continued prophylaxis is warranted (pg 34).

Grade C, Level 2+

Treatment of genital herpes in HIV-infected patients (pg 34)

1. A Acyclovir 400 mg orally tid for 7 to 10 days.

OR

2. A Valacyclovir 1 g orally bid for 7 to 10 days.

OR

3. A Famiclovir 500 mg orally bid for 7 to 10 days.

Grade A, Level 1+

Suppressive treatment of genital herpes in HIV-infected patients (pg 34)

1. A Acyclovir 400 mg to 800 mg orally bid or tid.

OR

2. A Valacyclovir 500 mg orally bid.

OR

3. A Famiclovir 500 mg orally bid.

Grade A, Level 1+
Management of genital herpes in pregnancy

First episode genital herpes – 1st and 2nd trimester acquisition

C Management should be in line with the clinical condition with the use of either oral or intravenous acyclovir (pg 35).

Grade C, Level 2+

C Vaginal delivery is anticipated in women who present with first episode genital herpes in the first and second trimesters as the risk for transmission to the neonate at delivery is low (pg 35).

Grade C, Level 2+

First episode genital herpes – 3rd trimester acquisition

C Caesarean section should be offered to all women presenting with first-episode genital herpes lesions at the time of delivery, or within 6 weeks of the expected date of delivery or onset of labour (pg 35).

Grade C, Level 2+

Recurrent genital herpes in pregnancy

C If there are no genital lesions at the onset of labour, Caesarean section to prevent neonatal herpes is not indicated (pg 36).

Grade C, Level 2+

A For women with a history of recurrent genital herpes, who would opt for caesarean delivery if HSV lesions were detected at the onset of labour, daily suppressive acyclovir given from 36 weeks of gestation until delivery may be given to reduce the likelihood of HSV lesions at term) (pg 36).

Grade A, Level 1+

B Counselling for genital herpes is important and should include (pg 36):

- Information on natural history of disease, potential for recurrent attacks, role of asymptomatic shedding in sexual transmission
- Abstinence from sexual activity during prodromal symptoms or when lesions are present
- Advice to inform current and new sexual partners of genital herpes
- Use of condoms with new or uninfected partners, particularly in first 12 months after first attack
• Information on anti-viral treatment available
• Risk of neonatal infection: women with a history of genital herpes or whose partners have history of genital herpes should inform their obstetrician early in pregnancy

Management of primary syphilis

Treatment of primary syphilis (pg 37)

1. Benzathine Penicillin G 2.4 million units i/m weekly x single dose. (For primary syphilis, most authorities administer a single dose, while some might use two doses for secondary syphilis).

OR

2. Aq. Procaine Penicillin G 600,000 units i/m daily x 10 days.

Penicillin-allergic patients (pg 38)

1. Doxycycline 100 mg orally bid x 14 days.

OR

2. Erythromycin 500 mg orally qid x 14 days.

OR

3. Azithromycin 500 mg orally od x 10 days.

C For HIV-infected individuals, either the same treatment as in non-HIV infected individuals or 3 doses of Benzathine Penicillin G 2.4 million units i/m weekly are recommended (pg 38).

C HIV-positive individuals with primary syphilis should be referred to an appropriate expert for follow up (pg 38).

B Oral doxycycline is the preferred oral alternative in all patients in view of its more favourable dosing intervals and low cost (pg 38).
The treatment guidelines listed refer to management of primary syphilis. For late latent syphilis, syphilis of unknown duration, congenital syphilis or neurosyphilis, the treatment recommendations are different and relevant expert advice should be sought (pg 38).

The same quantitative nontreponemal tests [i.e rapid plasma regain (RPR) or Venereal Disease Research Laboratory (VDRL)] should be repeated during follow up; the DSC Clinic follows up patients for a total period of two years (tests are repeated at 3 months; 6 months; 12 months; 18 months; 24 months) (pg 38).

A sustained fourfold or greater increase in RPR/VDRL titres suggests re-infection or treatment failure. Following treatment of early syphilis, RPR/VDRL should demonstrate a decrease in titre within 6 months. In particular, patients treated with non-penicillin based regimens should be followed up to look for signs of treatment failure (pg 38).

Since treponemal tests remain positive for life following effective treatment, proper documentation is necessary to prevent unnecessary retreatment. Patients should be given a letter documenting their treatment (pg 39).

Reinfection or relapse should be retreated preferably with supervised treatment schedules to ensure compliance, and sexual partners should be rescreened. These patients could also be referred to the relevant experts (pg 39).

All pregnant women should be screened for syphilis at the initial antenatal visit. Women who had documented treatment for syphilis in the past do not need retreatment during current or subsequent pregnancies if there is no clinical evidence of syphilis and the RPR/VDRL titre is negative or serofast in low titre compared to previous results (pg 39).
**Management of chancroid**

D Locally, chancroid is uncommon. Any suspected case should be referred to a specialist for evaluation, as routine laboratory tests are not widely available (pg 40).

**Grade D, Level 4**

**Treatment of chancroid** (pg 40-41)

1. **A** Azithromycin 1 g orally x single dose.

   **Grade A, Level 1+**

   OR

2. **B** Ceftriaxone 250 mg i/m x single dose.

   **Grade B, Level 2++**

   OR

3. **B** Ciprofloxacin 500 mg bid x 3 days.

   **Grade B, Level 2++**

**Management of lymphogranuloma venereum**

D Locally, lymphogranuloma venereum (LGV) is uncommon. Any suspected case should be referred to a specialist for evaluation, as routine laboratory tests are not widely available (pg 41).

**Grade D, Level 4**
Treatment of lymphogranuloma venereum (pg 41)

1. $C$ Doxycycline 100 mg bid x 21 days. 
   Grade C, Level 2+

   OR

2. $C$ Erythromycin 500 mg qid x 21 days. 
   Grade C, Level 2+

Management of genital discharges

$B$ Patients presenting with genital discharges should also be screened for HIV and syphilis (pg 42). 
   Grade B, Level 2++

GPP The following diagnostic approach is recommended (pg 42-43):

A. Patient history:
   1. **History of discharge**: onset, duration, colour, odour, association with micturition, dysuria, itch, rash, chronicity, involvement of sites (urethra, vagina, pharynx, rectum, eye), other systemic symptoms (fever, joint pain, ophthalmic symptoms), use of systemic or topical remedies, any history of similar symptoms in the past or partners with similar symptoms.
   2. **Medical history**: diabetes, HIV status, skin conditions, drug allergies, current & previous medications, menstrual history, obstetric history
   3. **Sexual history**: gender of partners, number of partners, venue for meeting partners, commercial sex exposure, partners with symptoms or signs, partners with known genital discharge diagnosis.
   4. **Travel history**: geographical area where sexual intercourse has taken place.

B. Physical examination:
   1. **Lesion**: appearance and character of discharge, consistency, odour.
   2. **Genital exam**: external genitalia and peri-anal area for inflammation and other lesions.
   3. **Lymph node(s)**: note number and location of enlarged nodes, size, tenderness.
   4. **General exam**: thorough examination of oral cavity and eyes/joints as necessary. In males, examine the penis carefully, retract the foreskin if present, inspect the meatus for
inflammation, and look for urethral discharge. If there is no discharge visible, gently ‘milk’ the urethra towards the meatus.

**Genital discharges in males**

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**D** All patients who have confirmed or suspected urethritis should be tested for gonorrhoea and chlamydia (pg 45).

*Grade D, Level 4*

**B** Because of high specificity (>99%) and sensitivity (>95%), a Gram stain of a male urethral specimen that demonstrates polymorphonuclear leukocytes with intracellular Gram-negative diplococci is presumptive of infection with *N. gonorrhoeae* in symptomatic men. Thus it is recommended that urethral smears be obtained in symptomatic men to aid in diagnosis (pg 46).

*Grade B, Level 2++*

**Chlamydia and gonorrhoea in women**

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**B** Microscopical examination of Gram-stained smears of endocervical discharge can be used as a point of care test to provide an immediate presumptive diagnosis of gonorrhoea (pg 46).

*Grade B, Level 2++*

**B** Gonococcal complement fixation test are not recommended for the diagnosis of gonorrhea. Serological tests are not recommended for the diagnosis of acute chlamydial infections (pg 47).

*Grade B, Level 2++*
Complications of genital discharges

Syndromic management of urethral symptoms in males (pg 48)

Urethral symptoms present

Presence of sexually transmitted urethral infection
This is indicated if any one of the following are present:
- History - risk of sexually transmitted infection present (e.g. unprotected oral, vaginal, anal sex)
- Examination - presence of urethral discharge and meatitis
- Laboratory - raised polymorphonuclear leucocytes (PML) on Gram-stained smear

Diagnosis of gonorrhoea is likely if there is -
- Thick purulent discharge
- Short incubation period (2-7 days)
- Gram-negative intracellular diplococci seen on Gram-stain microscopy
If any one of the above points are present -
- Send urethral swab for gonococcal culture
- Send urethral swab or first catch urine for nucleic-acid amplification test (NAAT) for *Chlamydia trachomatis*
- Treat for *Neisseria gonorrhoeae* and *Chlamydia trachomatis*
- Review in 14 days
If none of the above points are present -
- Send urethral swab for gonococcal culture
- Send urethral swab or first catch urine for NAAT for *Chlamydia trachomatis*
- Treat for *Chlamydia trachomatis*
- Review in 14 days

Grade D, Level 4

Treatment of gonorrhoea

- **Uncomplicated infection in adults - urethral, endocervical & rectal infection** (pg 49)
  1. **A** Ceftriaxone 250 mg intramuscular single dose.  
     Grade A, Level 1+
     OR
  2. **A** Cefixime 400 mg orally single dose.  
     Grade A, Level 1+
Alternative regimens (pg 49)

1. **A** Cefotaxime 1 g intramuscular single dose.
   
   Grade A, Level 1+

   OR

2. **A** Spectinomycin 2 g intramuscular single dose (for patients with β-lactam allergy).
   
   Grade A, Level 1+

**B** All patients with gonorrhoea should be given concurrent treatment for Chlamydia (pg 49).
   
   Grade B, Level 2++

- **Pharyngeal infection (pg 49)**

  **B** Ceftriaxone 250 mg intramuscular single dose with anti-chlamydia therapy (refer to section 3.7).
   
   Grade B, Level 2++

  **B** The fluoroquinolones (e.g. ciprofloxacin, ofloxacin, norfloxacin) should NOT be used as >70% of isolates in Singapore are resistant.
   
   Grade B, Level 2++

- **Gonococcal infection in pregnancy (pg 49-50)**

  **A** Cephalosporins in the recommended dosages are safe and effective in pregnancy.
   
   Grade A, Level 1+

  **A** Spectinomycin can be administered to pregnant women who are unable to tolerate cephalosporins.
   
   Grade A, Level 1+

  **B** Simultaneous treatment for chlamydial infection with azithromycin 1g single dose orally or erythromycin 500 mg orally qid x 7 to 14 days is advocated for pregnant women receiving treatment of gonorrhoea.
   
   Grade B, Level 2++

- **Follow-up (pg 50)**

  Patients should be instructed to abstain from sexual intercourse until 7 days after therapy is initiated. After this period sexual activity can be
resumed provided their symptoms have resolved and sex partners have been screened and treated.
- The test-of-cure is recommended for all sites and assessment for post-gonococcal urethritis (PGU) should be performed after 14 days.
- All treatments are less effective at eradicating pharyngeal infection and test-of-cure is strongly recommended following treatment of infection at this site.
- Serologic tests for syphilis and HIV should also be performed at the initial visit; if negative they should be repeated at 3 months after the last risky exposure.
- Education on STIs and safer sex advice should be regularly reinforced.

Grade D, Level 4

Management of sex partners

Sexual contacts in the preceding 60 days should be traced, screened and treated on epidemiologic grounds. If the last sexual exposure was > 60 days, the patient’s most recent partner should be treated (pg 50).

Grade B, Level 2++

Treatment of *Chlamydia trachomatis* infection

- **Uncomplicated urethral, endocervical, pharyngeal or rectal infections in adults (pg 50-51)**
  1. **A** Doxycycline 100 mg orally bid x 7 days.

      OR

  2. **A** Azithromycin 1 g orally single dose.

      OR

  3. **A** Erythromycin 500 mg orally qid x 7 days or 500 mg orally bid x 14 days.

      OR

  4. **B** Ofloxacin 200 mg orally bid or 400 mg orally od x 7 days.

      OR
• *Chlamydia trachomatis* infection in pregnancy (pg 51)

1. **A** Erythromycin 500 mg orally qid x 7 days or 250 mg orally qid x 14 days.
   
   **Grade A, Level 1+**

   OR

2. **A** Amoxicillin 500 mg orally tid x 7 days.
   
   **Grade A, Level 1+**

   OR

3. **A** Azithromycin 1 g orally single dose.
   
   **Grade A, Level 1+**

**Follow up**

**D** A test-of-cure is not necessary when treatment with doxycycline or azithromycin has been completed, unless symptoms persist or re-infection is suspected. Test-of-cure is however recommended after 4 weeks for infections in pregnant women, or when erythromycin was used. Non-culture tests (e.g. NAAT) done within 4 weeks of completing treatment may yield false positive tests due to persistence of chlamydial antigens (pg 51).

**Grade D, Level 4**

**Management of sex partners**

**D** Sex partners of symptomatic male patients within the last 60 days (or the most recent sex partner if the last contact was >60 days) should be screened and treated for chlamydial infection (pg 52).

**Grade D, Level 4**

**D** Sex partners of asymptomatic male patients and of females within the last 90 days (or the most recent sex partner if the last contact was >90 days) should be screened and treated for chlamydial infection (pg 52).

**Grade D, Level 4**
Treatment of non-gonococcal urethritis (NGU)

Management of sex partners

D Sex partners of men with non-gonococcal urethritis (NGU) within the last 60 days should be screened and treated. These partners should also be examined to exclude other associated STI (pg 52).

Management of recurrent or chronic NGU

- D Obtain objective evidence of urethritis, e.g. presence of urethral discharge or pus cells on urethral smear. If patient has no objective evidence, consider reassurance only.
- Exclude drug adherence failure or re-infection from untreated partner or a new partner.
- Consider referral to a specialist for further evaluation.

Grade D, Level 4

Vaginal discharge

B In women of reproductive age complaining of vaginal discharge the commonest cause is physiological, but infective and other causes should be excluded (pg 53).

Grade B, Level 2++

B A spontaneous complaint of abnormal vaginal discharge is most commonly due to a vaginal infection, and rarely, it may be the result of mucopurulent STI-related cervicitis. The symptom of abnormal vaginal discharge is highly indicative of vaginal infection, but poorly predictive for cervical infection. To ensure a cost-effective approach, risk assessment should therefore be done before investigations and treatment is provided (pg 54).

Grade B, Level 2++

B Where resources permit, one should consider the use of laboratory tests to screen women with vaginal discharge. Such screening could be applied to all women with discharge as well as to those with a positive risk assessment (pg 55).

Grade B, Level 2++
Investigation of a woman with vaginal discharge is indicated if (Table 2) (pg 55):
1. She is deemed to be at high risk of sexually transmitted infections (STI).
2. She has symptoms suggestive of upper genital tract infection (e.g. abdominal pain, dyspareunia or fever).
3. She has previous treatment which failed.
4. She is postnatal, post-miscarriage, or post-abortion.
5. She is within 3 weeks of insertion of intrauterine contraceptive device.
6. Requested by the patient.

Table 2 Investigations for vaginal discharges

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| Vulval fissures and erythema | - Microscopy for yeasts  
- Culture for yeasts  
- Herpes simplex virus (if multiple vesicles or ulcers present) |
| Vagina                    | - Wet preparation to detect Trichomonas vaginalis (posterior fornix)  
- Gram stain to detect clue cells and yeasts (lateral walls)  
- Culture for Trichomonas vaginalis and yeasts (lateral walls and posterior walls)  
- Amine ‘sniff’ test (if available)  
- Vaginal pH (if available) |
| Cervix                    | - Gram-stain for pus cells, Gram-negative intracellular diplococci  
- Culture Neisseria gonorrhoeae  
- Nucleic-acid amplification test (NAAT) for Chlamydia trachomatis |

Not all women with vaginal discharge require investigation. Empirical treatment can be given after taking a clinical and sexual history if (pg 56):
1. The woman is at low risk of STI.
2. She has no symptoms to suggest upper genital tract infection.
3. She can return for follow-up if symptoms do not resolve.

Grade B, Level 2++
A woman of reproductive age complaining of vaginal discharge should be investigated if (pg 56):
1. She is deemed to be at high risk of sexually transmitted infections (STI).
2. She has symptoms suggestive of upper genital tract infection (e.g. abdominal pain, dyspareunia or fever).
3. She has previous treatment which failed.
4. She is postnatal, post-miscarriage, or post-abortion.
5. She is within 3 weeks of insertion of intrauterine contraceptive device.
6. Investigation is requested by the patient.

Grade B, Level 2++

The major causes for vaginal discharge include candidiasis, bacterial vaginosis, trichomoniasis, *Chlamydia trachomatis* and gonococcal infection. Depending on the physician assessment of the patient’s risk factors, syndromic management may be directed against one or all of these common causes (pg 56).

Grade B, Level 2++

**Treatment of bacterial vaginosis (pg 59)**

Indications for treatment:
1. **A** All symptomatic women with bacterial vaginosis, pregnant or non pregnant.

Grade A, Level 1+

2. **A** Asymptomatic women with bacterial vaginosis before surgical procedures.

Grade A, Level 1+

**D** Patients with bacterial vaginosis should avoid vaginal douching, use of shower gels, antiseptic agents or shampoo in the bath (pg 59).

Grade D, Level 3

**Recommended regimens for bacterial vaginosis (pg 60):**

1. **A** Clindamycin cream 2% (5 g) intravaginally daily x 3 days or Clindamycin site-released (SR) cream 2% (5 g) intravaginally x single application.

Grade A, Level 1+

OR

2. **A** Clindamycin 300 mg orally bid x 7 days.

Grade A, Level 1+
OR

3. Metronidazole gel 0.75% (5 g) intravaginally daily x 5 days.
   Grade A, Level 1+

OR

4. Metronidazole pessary (500 mg) intravaginally bid x 7 days or daily x 14 days.
   Grade A, Level 1+

OR

5. Metronidazole 400 mg orally bid x 7 days.
   Grade A, Level 1+

OR

6. Tinidazole 2 g orally single dose.
   Grade A, Level 1+

Note:
1. Metronidazole 2 g orally single dose therapy is the least effective for bacterial vaginosis and is no longer recommended.
   Grade A, Level 1+

2. Intravaginal metronidazole gel and clindamycin cream have similar efficacy.

3. Metronidazole is less active against lactobacilli than clindamycin. However, clindamycin is more active than metronidazole against most of the bacteria associated with bacterial vaginosis. Clindamycin reduces vaginal Mobiluncus to a greater extent than metronidazole.

4. Clindamycin vaginal creams and suppositories may be oil-based and might weaken latex condoms.

If bacterial vaginosis causes vaginal discharge in pregnancy, it should be treated as for non-pregnant women (pg 61).
   Grade A, Level 1+

Recommended regimens for pregnant women (pg 61)

1. Clindamycin cream 2% (5 g) intravaginally daily x 3 days or Clindamycin-sustained released (SR) cream 2% (5 g) intravaginally x single application.
   Grade A, Level 1+

OR
2. A Clindamycin 300 mg orally bid x 7 days.  
   Grade A, Level 1+

   OR

3. A Metronidazole pessary (500 mg) intravaginally bid x 7 days or daily x 14 days.  
   Grade A, Level 1+

   OR

4. A Metronidazole 400 mg orally bid x 7 days. (Avoid in first trimester*).  
   Grade A, Level 1+

Note:
1. *Metronidazole crosses the placental barrier. Although it has been given to pregnant women without apparent complication or teratogenicity, it is advisable to withhold oral or vaginal metronidazole during the first trimester of pregnancy.
2. In three trials, intravaginal clindamycin cream was administered at 16-32 weeks’ gestation, and an increase in adverse events (e.g., low birth-weight and neonatal infections) was observed in newborns. Therefore, intravaginal clindamycin cream should only be used during the first half of pregnancy.

Suggested suppressive therapy for recurrent bacterial vaginosis (pg 62):

1. A Metronidazole gel 0.75% (5 g) twice weekly for 4-6 months.  
   Grade A, Level 1+

   OR

2. C Metronidazole 400 mg orally bid for 3 days at the start and end of menstruation.  
   Grade C, Level 2+

Suggested maintenance regime for recurrent bacterial vaginosis:

B Acetic acid vaginal gel use at the time of menstruation and following unprotected sexual intercourse to maintain acidic vaginal Ph (pg 62).  
   Grade B, Level 2+

Follow up

D Follow-up is not necessary if symptoms resolve. A test of cure is not required (pg 62).  
   Grade D, Level 4
Treatment of candidiasis

D Avoid local irritants (e.g. perfumed vaginal douch), scented panty-liners and tight fitting synthetic clothing (pg 63).  
Grade D, Level 4

Treatment for uncomplicated acute vulvovaginal candidiasis

A Both vaginal or oral antifungals (azoles) can be used in the treatment of uncomplicated acute vulvovaginal candidiasis (pg 63).  
Grade A, Level 1+

Recommended regimens for uncomplicated acute vulvovaginal candidiasis (pg 63-64):

1. A Butoconazole1-sustained released (SR) cream site 2% (5 g) intravaginally x single application.  
   OR
2. A Clotrimazole pessary 200 mg intravaginally daily x 3 days or 100 mg or 1% cream (5 g) intravaginally daily x 7 days or 500 mg x single application.  
   OR
3. A Fluconazole 150 mg orally single dose.  
   OR
4. A Isoconazole pessary 600 mg intravaginally x single application.  
   OR
5. A Itraconazole 200 mg orally bid x 1 day.  
   OR
6. A Miconazole pessary 200 mg intravaginally daily x 3 days or 100 mg or 2% cream (5 g) intravaginally daily x 7 days.  
   OR
7. A Nystatin pessary 100,000 U daily x 14 days.  
   Grade A, Level 1+
Note:
1. All topical and oral azole therapies give a clinical and mycological cure rate of 80-90% in uncomplicated vulvovaginal candidiasis. Nystatin preparations give 70-90% cure rate.
2. The treatment choice is the personal preference, availability and affordability as well as familiarity of the clinician with the treatment.
3. Topical azole creams and suppositories may be oil-based and might weaken latex condoms.
4. Topical azole treatment may cause vulvo-vaginal irritation and this should be considered if symptoms worsen.

Follow up
Follow-up is not necessary if symptoms resolve. A test of cure is not required (pg 64).

Treatment of recurrent vulvovaginal candidiasis
Clinicians should be aware of psychosexual problems and depression, which can occur in women with recurrent vaginal infections (pg 65).

Recommended regimens for recurrent vulvovaginal candidiasis (pg 65-66):

Induction regimens
1. **A** Fluconazole 150 mg orally every 72 hours x 3 doses.
   Grade A, Level 1+
   OR

2. **C** Topical imidazole therapy x 7-14 days according to symptomatic response.
   Grade C, Level 2+

Maintenance regimens
1. **B** Clotrimazole pessary 500 mg intravaginally once a week or 200 mg intravaginally twice a week.
   Grade B, Level 2++
   OR

2. **B** Fluconazole 150 mg orally once a week.
   Grade B, Level 2++
Note:

1. **B** Maintenance therapy should last 6 months. 90% of women should remain disease-free during treatment.  
   Grade B, Level 2++

2. **C** For women who have relapses between doses, consider twice-weekly 150 mg fluconazole or 50 mg fluconazole daily.  
   Grade C, Level 2+

**D** Monitor the liver function test when the woman is on regular oral azole treatment (pg 66).  
   Grade D, Level 4

**Candidiasis in pregnancy**

**B** Symptomatic candidiasis in pregnancy should be treated with topical azole therapy only. Longer courses (seven days) are recommended. Oral azole therapy is contraindicated (pg 67).  
   Grade B, Level 2+

**Non-albicans candidiasis**

**Treatment (pg 67)**

**C** Nystatin pessaries or nonfluconazole azole drug (oral or topical) are the first line treatment for non-albicans infection.  
   Grade C, Level 2+

OR

**C** Consider Amphotericin B vaginal suppositories 50 mg once a day for 14 days.  
   Grade C, Level 2+

**Trichomoniasis**

**Management of sex partners**

**D** Sexual contacts in the preceding 60 days should be traced, screened and treated on epidemiologic grounds. If the last sexual exposure was >60 days, the patient’s most recent partner should be treated (pg 68).  
   Grade D, Level 4
D Patients should be advised to avoid sexual intercourse (including oral sex) until they and their partner(s) have completed treatment and follow-up (pg 68).

Grade D, Level 4

D Screening for coexisting sexually transmitted infections should be undertaken in both the patients and their partners (pg 68).

Grade D, Level 4

C Women should be informed that T. vaginalis is a STI and partner management and treatment is recommended for all partners in the last 2 months (pg 68).

Grade C, Level 2+

Treatment of trichomoniasis

Recommended regimen for trichomoniasis (pg 69):

1. A Metronidazole 2 g orally x single dose.

OR

2. A Metronidazole 400 mg orally bid x 7 days.

OR

3 A Tinidazole 2 g orally single dose.

Grade A, Level 1+

Note:

1. D Metronidazole gel is not recommended because it is less efficacious (< 50%).

Grade D, Level 4

2. The recommended metronidazole regimes have resulted in cure rates of 90-95%.

Trichomoniasis in pregnancy

D Although the use of metronidazole in pregnancy has not been shown to be teratogenic or mutagenic in all stages of pregnancy or breastfeeding, caution should be advised for use in the first trimester. Metronidazole pessaries may be used to provide symptomatic relief but have lower cure rates than the oral regimes (pg 69).

Grade D, Level 4
D Treatment of *Trichomonas vaginalis* relieves symptoms of vaginal discharge in pregnant women and might prevent respiratory or genital infection of the newborn and further sexual transmission. Clinicians should counsel patients regarding the potential risks and benefits of treatment (pg 69).

Grade D, Level 4

A It is reasonable to delay therapy in asymptomatic pregnant women until after 37 weeks’ gestation. In addition, these pregnant women should be provided careful counseling regarding condom use and the continued risk of sexual transmission (pg 70).

Grade A, Level 1+

**Follow up**

A Follow-up is unnecessary for asymptomatic patients. Patients with persistent symptoms should be retreated with metronidazole 400 mg orally bid for 7 days (pg 70).

Grade A, Level 1+

A If treatment failure occurs repeatedly, the patient can be treated with high dose oral metronidazole 2 g daily for 3 days (pg 70).

Grade A, Level 1+

**Cost-effectiveness issues**

GPP Doctors should consider efficacy, adverse side effects, dosing frequency, and cost to the patient when recommending treatments. For compliance issues, single dose therapies are generally recommended (pg 71).

GPP

B Male patients complaining of urethral discharge and/or dysuria should be examined for discharge. The major pathogens causing urethral discharge are *Neisseria gonorrhoeae* and *Chlamydia trachomatis*. In the syndromic management of a patient with urethral discharge, treatment should adequately cover these two organisms and has been found to be cost-effective. Where reliable laboratory facilities are available, a distinction may be made between the two organisms (pg 71).

Grade B, Level 2++