Syphilis in pregnancy

Clinical Guideline Presentation v5.0

45 minutes
Towards CPD Hours
Learning objectives

• Recall basic pathophysiology of syphilis in pregnancy and congenital syphilis in the newborn
• Identify recommended screening according to risk assessment
• Identify indications for maternal and neonatal treatment
Aetiology of syphilis

Syphilis is a bacterial infection caused by the spirochaete bacterium *Treponema pallidum* (*T. pallidum*)

Syphilis, and congenital syphilis, are notifiable diseases in Queensland
Transmission

Transmission of syphilis can occur in multiple ways including:

- Direct contact with infectious lesions (chancre)—most commonly through sexual contact
- Vertical transmission—transplacental during pregnancy
- Less commonly through infected blood
- Incubation period is approximately 21 days from contact to the development of a chancre
**Assessment**

- Identify increased & higher risk groups
- Maternal, obstetric and sexual history
- Offer screening for sexually transmitted diseases (STIs)
- Conduct clinical examination
- Dry swab suspicious genital lesions for polymerase chain reaction (PCR)
- Request *Syphilis serology* on pathology form
Stages of syphilis

Primary (Infectious)
- Lesions may be solitary or multiple
- Lesions may be painful or painless
- Spontaneously heal within 3–10 weeks without treatment

Secondary (Infectious)
- Follows untreated primary syphilis 4–8 weeks after first lesion
- Rash to palms and soles of feet
- Resolves without treatment in 3–12 weeks

Latent
- Follows untreated secondary stage
- Asymptomatic
- Reactive serology with no clinical manifestations

Tertiary
- Can affect any organ system
- Occurs in one-third of untreated patients
Primary chancre sores & typical rash presentations

Treponema pallidum

Images from the Centre for Disease Control and Prevention (CDC) 2018
## Additional screening

### High risk of syphilis

- Sexual contact with an infectious syphilis case
- Woman or her partner(s) identify as Aboriginal and/or Torres Strait Islander AND the woman or her partner(s) reside in declared outbreak area
- Substance use during pregnancy—particularly (‘ice’)
- Woman’s partner is a man who has sex with men
- Late, limited or no antenatal care
- Engages in high risk sexual activity
Recommended testing

Universal Risk
- Routinely screen at first appointment (ideally before 10 weeks)
- Repeat screening at:
  - 26–28 weeks
  - 36 weeks
  - If suspicious lesions—dry swab PCR and full STI check

High Risk
- Screen as per universal risk
- Repeat screening:
  - Around 20 weeks (16–24 weeks)
  - 26–28 weeks
  - 34–36 weeks
  - At birth (woman)

Testing at birth
- Test woman at birth if any of:
  - 36 week screening not completed (all women)
  - Syphilis requiring treatment during pregnancy
  - Woman is High risk
  - No repeat serology after 26 weeks AND any of:
    - Preterm birth with most recent serology > four weeks before birth
    - Woman or partner(s) identify as Aboriginal and/or Torres Strait Islander
    - Adolescent pregnancy
    - STI in the current pregnancy or preceding 12 months
    - Woman and/or partner(s) have ongoing sexual links in high prevalence countries (e.g. migrants or refugees)
    - If indicated following risk assessment
## Maternal treatment

<table>
<thead>
<tr>
<th>Infectious syphilis requiring treatment (primary or secondary)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzathine penicillin 1.8 g (2.4 million units) IM as a single dose</td>
</tr>
<tr>
<td><strong>NB:</strong> if syphilis requiring treatment is suspected and there is concern the woman will not re-present for care—presumptively give the recommended treatment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Late latent or syphilis of unknown duration requiring treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzathine penicillin 1.8 g (2.4 million units) IM weekly for three weeks</td>
</tr>
</tbody>
</table>
**Postpartum maternal testing**

**Repeat maternal syphilis serology at birth if:**

- Syphilis requiring treatment during pregnancy
- Woman is *High risk*
- No repeat serology after 26 weeks **AND any**
  - Preterm birth with most recent serology > four weeks before birth
  - Woman or partner(s) identify as Aboriginal and/or Torres Strait Islander
  - Adolescent pregnancy
  - STI in the current pregnancy or preceding 12 months
  - Woman and/or partner(s) have ongoing sexual links in high prevalence countries (e.g. migrants or refugees)
  - If indicated following risk assessment

**If syphilis requiring treatment, maternal serological follow-up at:**

- Three months
- Six months **and**
- 12 months

**Discuss with QSSS and expert practitioner if:**

- Maternal titre not decreased four-fold within 12 months **OR**
- There is a four-fold increase
Aetiology of congenital syphilis (CS)

Cause: the spirochaete bacterium *Treponema pallidum* (*T. pallidum*) crossing the placenta, from the mother who has reactive serology.
Babies at risk of CS

Suspect CS in babies born to women who:

• Had syphilis requiring treatment in pregnancy (irrespective of adequacy of treatment)
• Limited or no antenatal care
• Diagnosed with syphilis (any stage) within three months postpartum
Diagnosis of CS

NB: Do not delay treatment while waiting for prenatal diagnostic tests

Prenatal diagnosis

- Ultrasound examination
- Maternal diagnosis

Diagnosis at birth

- Conduct full clinical examination
- Collect syphilis serology (do not collect blood from umbilical cord)
- Placental histopathology (collect entire fresh placenta for testing)

Additional diagnostic tests for consideration

- Cerebrospinal fluid (CSF) testing
- Haematology
- Radiography
Signs and symptoms of CS

60–90% of babies are asymptomatic at birth

Signs and symptoms are usually subtle and non-specific

Usually appear by three months of age, most often by 5 weeks

- Hepatomegaly
- Rhinitis
- Rash
- Generalised lymphadenopathy
- Nonimmune fetal hydrops
- Fever/sepsis
- Failure to move extremities secondary to pain
- Ophthalmologic manifestations
- Gastrointestinal manifestations
# Treatment

**NB:** If a dose is missed restart the entire treatment regimen

<table>
<thead>
<tr>
<th>Newborn 0–7 days of age</th>
<th>Newborn 8–30 days of age</th>
<th>Newborn more than 30 days of age</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended:</strong></td>
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<tr>
<td>Benzyl penicillin</td>
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</tr>
<tr>
<td>30 mg/kg IV 12 hourly for 10 days</td>
<td>30 mg/kg IV 8 hourly for 10 days</td>
<td>30 mg/kg IV 4–6 hourly for 10 days</td>
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<tr>
<td><strong>Alternative:</strong></td>
<td><strong>Alternative:</strong></td>
<td><strong>Alternative:</strong></td>
</tr>
<tr>
<td>Procaine penicillin</td>
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</tr>
<tr>
<td>50mg/kg IM daily for 10 days</td>
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</table>
Newborn follow up

- Follow-up serology:
  - At three, six and 12 months of age
  - If non-reactive at 12 months, no further testing required
- If follow-up testing is potentially difficult:
  - Aim to repeat testing at least twice in the first six months of life (with at least four weeks between tests)
  - Consider feasibility of testing at routine follow up appointments (e.g. immunisation, infant health checks)
- If initial newborn serology is non-reactive in the reactive mother, follow-up at three and six months
- If serology remains non-reactive at six months, no further testing is required
Case study: Syphilis

• Mary is a 30 year old multigravida. She lives in a syphilis outbreak declared area and identifies as an Aboriginal and Torres Strait Islander woman.

• She returns to the hospital reporting that her baby Alexander, now 12 days of age, was suffering from a white discharge from his nose (resolved at day 5).

• Alexander has developed a rash on his back and feet and cries when he tries to move his legs.

• When you review Mary’s chart you notice that she had non-reactive syphilis serology at her booking-in visit at 26 weeks. She then had a reactive serology test at birth but no treatment or follow up was documented.
**Clinical indicators**

What indicators for syphilis and congenital syphilis do you identify from Mary’s presentation?

<table>
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<tbody>
<tr>
<td>• Mary identifies as an Aboriginal and Torres Strait Islander and resides in a syphilis declared outbreak area</td>
</tr>
<tr>
<td>• Late antenatal booking in with no follow-up serology based on risk category</td>
</tr>
<tr>
<td>• Reactive syphilis serology antenatally</td>
</tr>
<tr>
<td>• Baby Alexander has signs of congenital syphilis (rhinitis, rash and failure to move extremity secondary to pain (pseudoparalysis of Parrot))</td>
</tr>
<tr>
<td>• Mary is multigravida – ? risk of previous babies born with syphilis</td>
</tr>
</tbody>
</table>
Communication

What questions might you consider asking Mary?

- Some of our activities in life can make us at a higher risk for syphilis. Have you ever taken any illegal drugs before? How many sexual partners do you have? Have you ever been treated for an STI?

- Have you, or your partners, ever tested positive to syphilis before?

- Have you, or your partners, ever been treated for syphilis before?

- How many other children do you have? How old are they? Did any of your other children have signs or symptoms of congenital syphilis?
### Testing and treatment

<table>
<thead>
<tr>
<th>What tests do you recommend to Mary and baby Alexander?</th>
<th>What treatment would you recommend?</th>
</tr>
</thead>
</table>
| **Mary:**  
  • *Syphilis serology* on pathology request form | **Mary:**  
  • Benzathine penicillin 1.8 gm (2.4 million units) IM as a single dose |
| **Baby Alexander:**  
  • *Syphilis serology* pathology request  
  • Consider CSF test (consult with expert health practitioner) | **Baby Alexander:**  
  • Benzyl penicillin 30 mg/kg IV 8 hourly for 10 days  
  
**NB:** all treatment in consultation with an expert practitioner
Communication

Who will you communicate with?

- Expert health practitioner/s
- Queensland Syphilis Surveillance Unit

- Discuss contact management with Mary
- Importance of treatment

- Communicate with other health practitioners through documentation in clinical notes

- Aboriginal and/or Torres Strait Islander liaison, as required