

Introduction

Syphilis is a sexually transmitted disease caused by **Treponema pallidum pallidum**.

Classically the disease has 3 stages:

- **Primary** – manifested by a **chancre(s) in genital, anal or oral sites** (may be unnoticed especially as usually painless)
- **Secondary** – manifested by **constitutional symptoms, rash, and other signs** such as alopecia and condylomata lata
- **Latent or tertiary** – latent syphilis has no **associated** symptoms and tertiary may be benign, cardiovascular or neurological

Syphilis is becoming more common in New Zealand and numbers of cases have increased over recent years.

IMPORTANT:

All new positive serology results should be discussed with a doctor at a Specialist Sexual Health or Infectious Disease Service and all patients with suspected syphilis of any duration should be referred to a Specialist Sexual Health Service or Infectious Disease service for evaluation and treatment.

All cases of clinical primary or secondary syphilis should be referred URGENTLY to a Specialist Sexual Health Service or Infectious disease clinic for further investigation and management.

Testing Methods

- Currently all antenatal patients are screened for syphilis at least once during pregnancy
- Additional testing is done where the clinician feels it is appropriate
- Groups at **high risk of infection are: immigrants and refugees** from high-risk countries (e.g. Eastern Europe, Southeast Asia, China, South America, Africa, Pacific Islands esp. Fiji), **sexual partners** of patients with a diagnosis of syphilis, **persons who have had sex in a high risk country, HIV positive persons, men who have sex with men (MSM)**.

In some regions initial serological screening is with Enzyme Immunoassay (EIA). If this is positive, then RPR and TPHA (or TPPA) are performed as confirmatory tests.

Tests

Demonstration of Treponema Pallidum

Dark Ground Microscopy

- Suitable for chancres (**not mouth or rectal**), or moist skin lesions
- **Requires specialist laboratory equipment**

Direct Fluorescent Antibody (DFA)

- Suitable for chancres at any site, and moist skin lesions

Serological Tests

EIA

- Enzyme Immunoassay
- Initial screening test
- Reported as non-reactive or reactive
- False positives may occur, but are uncommon

RPR

- Rapid Plasma Reagin
- Reported as non-reactive or reactive with titre given
- Titre used to help evaluate stage of infection, and to monitor resolution following treatment
- When used as a screening test in a low prevalence population, false positive results are a significant issue

TPHA / TPPA

- Reported as non-reactive or reactive
- Some labs gives a titre but this is not significant
- False positives may occur

Interpretation of Results

General Points

Non-venereal Treponematoses

- **None of the currently available tests are able to distinguish between syphilis and other non-venereal treponematoses e.g. Yaws**
- The decision whether to treat for syphilis or not has to be made on the basis of history and clinical evaluation by a specialist

False Positive Reactions

- All of the above testing methods may produce false positive reactions, especially in a low prevalence population
- **Many medical conditions including acute and chronic viral infections, malignancy, and autoimmune disorders can give a false positive non-treponemal test result**
- Samples in which **all 3 tests are positive (EIA, RPR and TPHA)** are highly likely to **represent a true positive result**
- Samples in which the EIA and one other test are positive may represent false positive and require further evaluation

Management of Patient with Suspected Primary Chancre

DO NOT:

- Prescribe antibiotics
- Give any solutions to apply to ulcer

DO:

- **Refer URGENTLY to a Specialist Sexual Health Service or Infectious Disease Service**
- Advise the patient not to put any applications on ulcer. Advise the patient to abstain from sexual activity until diagnosis confirmed
- Do syphilis serology

Treatment

Primary, secondary and early latent syphilis

- **Benzathine penicillin 1.8gm im**

Late latent syphilis, or syphilis of unknown duration

- **Benzathine penicillin 1.8gm im weekly for 3 weeks**

Partner Notification and Management of Sexual Partners

Primary, secondary, early latent syphilis and syphilis of unknown duration where RPR titre > 1:16:

- Primary syphilis - contacts within 90 days should be tested and treated presumptively
- Secondary syphilis - contacts >90 days but within 6/12 should be serologically evaluated

Early latent syphilis and syphilis of unknown duration where RPR >1:16

- Contacts >90 days but within 1 year should be serologically evaluated

Late syphilis (late latent and tertiary):

- Serologic evaluation of partners
- Serologic evaluation of children if index case is female

Follow-up

Primary, secondary, early latent syphilis and syphilis of unknown duration where RPR titre > 1:16:

- **Repeat serology at 1,2,3,6, and 12 months**
- Primary or secondary syphilis – fourfold (2 dilutions) increase in titre or failure of RPR titre to reduce fourfold (2 dilutions) within 6 months indicates risk of treatment failure or reinfection – re-evaluation is necessary

Early latent syphilis and syphilis of unknown duration where RPR > 1:16

- Fourfold (2 dilutions) increase in titre or failure of the RPR titre to decrease fourfold (2 dilutions) within 12-24 months indicates treatment failure or reinfection – re-evaluation is necessary

Late latent and tertiary syphilis (excluding neurosyphilis)

- **Repeat serology at 6 and 12 months**
- All results should be viewed by a doctor
- **Fourfold** (2 dilutions) increase in titre indicates risk of treatment failure or reinfection – re-evaluation is necessary

Referral Guidelines

All patients with suspected syphilis of any duration should be referred to a Specialist Sexual Health Service for evaluation and treatment.

See BASHH guidelines on syphilis for more detail. www.bashh.org/guidelines