Case Study : Syphilis in Pregnancy

RPA/Canterbury ANSC: Educational Case Study Series – March 2024

Key message for health practitioners caring for women in pregnancy:

1. Congenital syphilis rates are rising in NSW.
2. In NSW, all pregnant women should be tested at their first appointment and at 26-28 weeks.
3. Offer and ***repeat*** opportunistic testing for women at higher risk of re/infection.
4. The Syphilis Notification Form NSW is a useful reference tool for history taking and classification of syphilis stages.
5. Contact your local sexual health clinic for advice and assistance.
6. Test, Treat and Trace!

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In 2022, NSW recorded the highest number of infectious syphilis notifications within the last 10 years, including three congenital syphilis cases.[1] Congenital syphilis (CS) cases are entirely preventable and represent a failure of the delivery of antenatal care services and syphilis control plans.[2]

Year	**2020**	**2021**	**2022**
Infectious syphilis notifications	1722	1809	1945
Congenital syphilis notifications	4	2	3

Table 1: Infectious syphilis and congenital syphilis notifications from 2020-2022[1]

Infectious syphilis notifications have historically been higher in men who have sex with men (MSM). While this remains the case, the rate of infectious syphilis in females has more than doubled in the last 5 years. [1] The ratio of male to female notifications has now decreased from 20.5 in 2013 to 9.5 in 2022. [1]

Left untreated, the ***treponema palladium*** infection in the foetus can result in in-utero foetal death, stillbirth, or premature birth with CS.[2] The majority of neonates may not demonstrate any observable signs of CS – hepatomegaly, ascites, hydrops, foetal anaemia.[2] Non-specific issues (eg. rhinitis, failure to thrive, pneumonia) are most likely to occur within 3 months of birth.[2]

In response to rising CS rates, NSW Health has introduced **universal antenatal syphilis screening** at 26-28 weeks gestation. [1] This is in addition to existing antenatal screening at the first antenatal appointment. Specialist GPs are best placed to test, treat and trace women of reproductive age and can also offer additional opportunistic testing for pregnant women at high risk of syphilis re/infection.

Case Study

Meiwen is a 40 year old female G2P1 of gestation 9/40 who returns this syphilis result after the first antenatal appointment.

Results

Rapid plasma regain (RPR) Antibody Titre	Non reactive
Treponema palladium IgG	Reactive
Treponema pallidum particle agglutination assay (TPPA)	Reactive

At the follow up appointment, she confirms that she was diagnosed with syphilis in China in 2012. She is sure that she received treatment but is unable to provide you any details regarding this. She is monogamous with her long term male partner and has not had any other syphilis testing within the last 24 months.

How do you interpret her syphilis test result and what is your next management step?

Based on her history, this result could be consistent with past treated syphilis as both the T.palldium IgG and TPPA indicate she has previously been infected with syphilis with no current syphilis infection as the RPR is non-reactive. However, as we cannot confirm her past treatment regime and she has no confirmed negative syphilis test in the last 24 months, it would be safest to treat her as a late latent syphilis to prevent any maternal to child (MTC) transmission of syphilis. Treatment with benzathine benzylpencillin 1.8G (2.4 million units) IM weekly for 3 weeks is recommended.[3]

The diagnosis of late latent syphilis, the risks of congenital syphilis and recommended treatment plan is discussed with Meiwen. She mentions that she may have a penicillin allergy which was diagnosed through a skin test in China in 2016. She is unable to provide further verbal or written information. She is very anxious about MTC transmission of syphilis but is worried about treatment with penicillin.

What is your advice to her?

The highest rates of MTC transmission of syphilis are in primary or secondary syphilis infections[4] *Treatment is considered successful if it occurs >4 weeks prior to delivery.*[4] *Rates of MTC transmission of syphilis are highest in the 3rd trimester compared to the 1st and 2nd trimester as the time available to complete syphilis treatment > 4 weeks before delivery may not be sufficient.*

The use of macrolides in penicillin-allergic pregnant women is not considered adequate therapy due to increasing resistance of T. palladium to macrolides[2]*. As penicillin may be contraindicated for this patient, specialist advice from an infectious disease or sexual health physician should be sought. For pregnant women, desensitization in a hospital setting will be recommended prior to treatment with benzathine benzylpenicillin.*

Meiwen had no issues with penicillin desensitization and received benzathine benzylpenicillin 1.8G (2.4 million units) IM weekly for 3 weeks.

When would you repeat her syphilis tests?

After any infectious syphilis diagnosis and treatment, RPR monitoring should take place at 3, 6 and 12 months. This is to confirm successful treatment by monitoring for a 4-fold decrease in the RPR over 12 months and/or to screen for reinfection. This is particularly important in pregnant women due to the risk of MTC if there has been inadequate treatment.

It is also now recommended to rescreen pregnant patients in NSW at 26-28 weeks.

Meiwen continues to see you for her antenatal shared care and her syphilis RPR remains non-reactive.

What other steps should be considered?

Syphilis is a notifiable disease. Medical practitioners are required to report notifiable conditions and case notification should be initiated within 24 hours of diagnosis.[5] Currently, syphilis is in the routine category of notification by phone/mail. The local public health unit will likely contact the medical practitioner by phone (if the case is a woman of reproductive age (<46 years)) or a letter will be sent with the Syphilis Notification Form to be completed.[2,5]

Children born to women who are treated for syphilis in pregnancy are recommended to have a specialist paediatrician review. (2) Depending on the complexity of the case, it is useful to clarify if and when this review will be undertaken through the hospital.

Recap:

1. Congenital syphilis rates are rising in NSW.
2. In NSW, all pregnant women should be tested at their first appointment and at 26-28 weeks.
3. Offer and ***repeat*** opportunistic testing for women at higher risk of re/infection.
4. The NSW Health Syphilis Notification Form is a useful reference tool for history taking and classification of syphilis stages.
5. Contact your local sexual health clinic for advice and assistance.
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Patient Resources

- Syphilis Fact Sheet
- Play Safe - The facts about Syphilis
- Better to Know – For Aboriginal men and women
- Sexual Health Info Link (SHIL)

Clinician Resources

- ASHM Syphilis Decision Making Tool
- ASHM STI Testing Guideline for Aboriginal And Torres Strait Islander People
- ASHM Australasian Contact Tracing Guidelines
- Australian STI Management Guidelines for Use in Primary Care
- NSW Health Syphilis Notification Form
- NSW Health Congenital Syphilis

References

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4. Australasian Society for Infectious Diseases (ASID) 2022. Management of Perinatal Infections (3rd ed), https://asid.net.au/publications, accessed on 18 Feb 2024.
5. NSW Health. 2023. Disease notification, https://www.health.nsw.gov.au/Infectious/Pages/notification.aspx, accessed 18 Feb 2024.