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LATE LATENT SYPHILIS IN PREGNANCY: A CASE REPORT

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Abstract

Introduction: *Syphilis remains a significant global public health problem, particularly in pregnant women, due to the risk of vertical transmission and adverse fetal outcomes. Late latent syphilis often goes undiagnosed because of its asymptomatic nature. Early antenatal screening and appropriate treatment are essential to prevent congenital syphilis.*

Methods: *This case report describes a 19-year-old pregnant woman diagnosed with late latent syphilis during her second trimester. Diagnosis was confirmed through serological testing using Venereal Disease Research Laboratory (VDRL) and Treponema pallidum Hemagglutination Assay (TPHA). The patient received intramuscular benzathine penicillin G, 2.4 million units weekly for three consecutive weeks, and was monitored through serial serologic follow-up.*

Results: *Initial examination revealed no mucocutaneous or systemic abnormalities. Laboratory evaluation confirmed late latent syphilis (VDRL 1:64; TPHA 1:5120). Follow-up results showed a gradual fourfold decline in VDRL titers (1:64 → 1:32 → 1:16 over six months), indicating adequate therapeutic response. No maternal or fetal complications were reported during pregnancy.*

Discussion: *This case underscores the importance of routine antenatal syphilis screening and timely intervention with penicillin therapy. Effective follow-up and partner management remain crucial to prevent congenital infection and support national elimination programs.*

Conclusion: *Early detection and proper management of syphilis in pregnancy are vital for preventing vertical transmission and ensuring favorable pregnancy outcomes.*

Keywords: *Congenital syphilis; Latent syphilis; Pregnancy; Treponema pallidum; Benzathine penicillin G*

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INTRODUCTION

Syphilis is a chronic sexually transmitted infection caused by *Treponema pallidum*, a spirochete that can be transmitted through sexual contact, blood transfusion, or vertically from mother to fetus. The disease progresses through primary, secondary, latent, and tertiary stages, with the latent phase being clinically asymptomatic but serologically positive.[1] Although the global incidence of syphilis decreased significantly following the introduction of penicillin therapy in the 1950s, a resurgence has been observed in recent decades, particularly among men who have sex with men (MSM) and bisexual populations.[2–3]

Despite being preventable and treatable, syphilis remains a major global health problem. The World Health Organization (WHO) estimated that in 2013, over 520,000 pregnancies worldwide resulted in adverse outcomes due to maternal syphilis infection.[4] Untreated maternal syphilis can cause stillbirths (25%), neonatal deaths (14%), and other perinatal complications (40%).[5] In developing countries, including Indonesia, limited screening coverage and underdiagnosis contribute to the persistence of congenital syphilis cases.[6]

The latent stage, especially late latent syphilis, poses a significant challenge because the infection remains asymptomatic while retaining the potential for vertical transmission. During pregnancy, T. pallidum can cross the placental barrier as early as 10–12 weeks of gestation, resulting in fetal infection, miscarriage, preterm delivery, or congenital syphilis.[7] Early diagnosis through routine antenatal screening and appropriate treatment are therefore crucial to prevent adverse maternal and fetal outcomes.[8]

This case report presents a 19-year-old pregnant woman diagnosed with late latent syphilis during her second trimester. The case highlights the importance of early antenatal screening, adherence to national and international treatment guidelines, and close serological monitoring to ensure therapeutic success and prevent congenital transmission..

Case Description

A 19-year-old woman, G2P1A0, with a gestational age of 21 weeks came for treatment to the Dermatology and Venereology Department of Haji Adam Malik Hospital on May 22, 2024, bringing a positive Venereal Disease Research Laboratory (VDRL) test result from the primary health center. The patient previously underwent antenatal care (ANC) to determine her gestational age. In addition to ANC, she also underwent triple elimination screening, including anti-HIV, HBsAg, and VDRL tests. The results showed that her gestational age was 21 weeks, with a positive VDRL, and negative anti-HIV and HBsAg results. The patient came alone to the Dermatology and Venereology Clinic at RSUP HAM because she was worried about her baby's condition. At RSUP HAM, she underwent VDRL and TPHA tests, which returned reactive results with a VDRL titer of 1:64 and a Treponema Pallidum Hemagglutination Assay (TPHA) titer of 1:5,120. The patient did not complain of any reddish spots on the genitals, buttocks, palms of the hands and feet, or on the body. Complaints of itching, pain, fever, and/or weakness were also denied. A history of watery pimples and discharge from the genitals, hair loss or bald areas on the head, and abnormalities in the nails and lips were also denied. The patient denied a history of multiple sexual partners. Sexual intercourse through anogenital or orogenital intercourse was denied. The patient said that her husband had experienced a wound on his genitals about 1.5 years ago that was not itchy or painful and improved without treatment. At that time, the patient and her husband were still actively having sex without using protection or condoms. The patient said that her husband had alsoundergone VDRL and TPHA immunoserology examinations with reactive results.

Antenatal history: the patient routinely checks her pregnancy at the primary health center. The patient denied any previous history of other diseases, history of atopy, or drug and food allergies.

Physical examination found good general condition and compos mentis consciousness. Blood pressure 120/80 mmHg, pulse 82 times/minute, respiration 20 times/minute, and axillary temperature 37.8°C. Body weight 69 kg and height

155 cm. In general status, the head was normocephalic, and both eyes did not appear anemic, within normal limits. Examination of the ears, nose, and throat was found within normal limits, on thorax examination, heart and lung sounds were found within normal limits. Enlarged lymph nodes in the neck and axilla were not found. On abdominal examination within normal limits, the liver and spleen were not palpable. On upper and lower extremities within normal limits. There were no enlarged inguinal lymph nodes. Examination of nails and hair found no abnormalities. On dermatological examination, locations throughout the body showed no abnormalities and skin lesions. On venereological examination, no lesions or discharge were found in the perianal, perineal, and vaginal regions.

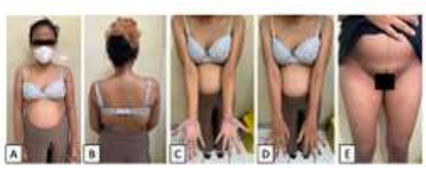

Figure 1. Patient examination at the initial visit. No lesions or abnormalities were found on the thorax (A), back (B), palms (C,D), and vagina (E).

Based on anamnesis, dermatological examination, venereology, and supporting examination, the working diagnosis in this patient is late latent syphilis. The patient was given drug therapy in the form of intramuscular injection of

7.2 million units benzathine G penicillin divided into 3 doses, namely 2.4 million units with an interval of 1 week (3 consecutive weeks). Non-drug management in the form of educational information communication regarding laboratory test results and their meaning, diagnosis, drugs given, possible side effects of the drugs, abstinence until proven cured by the laboratory examinations, avoiding high-risk sexual behavior, and sexual partners were asked to come for treatment. The patient was planned for VDRL and TPHA examinations in the

1st, 3rd, 6th, 9th, 12th, and 24th months after treatment.

First control (2 month after the treatment), the general condition and vital signs of the patient were within normal limits. General status was found to be within normal limits and there was no enlargement of regional lymph nodes. In the dermatological examination of the whole body, there were no abnormalities or skin lesions. Serological examination of VDRL and quantitative TPHA 1 month after treatment, the titer results were VDRL 1:64 and TPHA 1:2560. Patients are educated with IEC regarding laboratory test results and their meaning, abstinence until laboratory- proven recovery, and avoiding high-risk sexual behavior.

Second control (3 months after the treatment), the general condition and vital signs of the patient were within normal limits. General status was found to be within normal limits and there was no enlargement of regional lymph nodes. In dermatological examination of the whole body, there were no abnormalities or skin lesions. Serological examination of VDRL and quantitative TPHA after 3 month, the titer results were VDRL

1:32 and TPHA 1:1280. Patient are educated with IEC regarding laboratory test results and their meaning, abstinence until laboratory-proven recovery, and avoiding high-risk sexual behavior.

Third control (4 months after the treatment), the general condition and vital signs of the patient were within normal limits. In general status, it was found to be within normal limits and there was no enlargement of regional lymph nodes. The dermatological examination of the whole body, there were no abnormalities or skin lesions. Serological examination of VDRL and quantitative TPHA 6 months after the treatment, the titer results were VDRL 1:16 and TPHA 1:640. Patients were educated with IEC regarding laboratory test results and their meaning, abstinence until laboratory- proven recovery, and avoiding high-risk sexual behavior. Patients were planned for repeat serology VDRL and quantitative TPHA examinations at 3 and 6 months and were expected to maintain safe sexual behavior.

Prognosis quo ad vitam ad bonam, quo ad functionam ad bonam, quo ad sanactionam dubia ad bonam.

RESULT AND DISCUSSION

A 19-year-old woman, G2P1A0, with a gestational age of 21 weeks came for treatment to the Dermatology and Venereology Department of HAM Hospital on May 22, 2024, bringing a positive Venereal Disease Research Laboratory (VDRL) test result from the primary health center (puskesmas). The patient previously underwent antenatal care (ANC) to determine her gestational age. In addition to ANC, she also underwent triple elimination screening, including anti-HIV, HBsAg,and VDRL tests. The results showed that her gestational age was 21 weeks, with a positive VDRL, and negative anti-HIV and HBsAg results. The patient came alone to the Dermatology and Venereology Clinic at RSUP HAM because she was worried about her baby's condition. At RSUP HAM, she underwent VDRL and TPHA tests, which returned reactive results with a VDRL titer of 1:64 and a Treponema Pallidum Hemagglutination Assay (TPHA) titer of 1:5,120. The patient did not complain of any reddish spots on the genital area, buttocks, palms of the hands and feet, or on the body. Complaints of itching, pain, fever, and/or weakness were also denied. A history of watery pustules and discharge from the genitals, hair loss or bald areas on the head, and abnormalities in the nails and lips were also denied. The patient denied a history of multiple sexual partners. Sexual intercourse through anogenital or oro-genital was denied. This is to the literature that the diagnosis of late latent syphilis can be confirmed with a positive serological examination and no clinical signs.[2]

Latent syphilis is a diagnosis of exclusion where the diagnosis can be made after primary, secondary, and tertiary syphilis have been excluded. Latent syphilis is classified into early latent syphilis and late latent syphilis. This division is important because 25% of patients with early latent syphilis can relapse into secondary syphilis, which is accompanied by a higher risk of sexual transmission. In addition, the management of early latent syphilis differs from late latent syphilis. The management of early latent syphilis is the same as that of primary and secondary syphilis, whereas late

latent syphilis requires a longer therapy regimen.[27]

The diagnosis of late latent syphilis in this patient was established because it did not meet the diagnostic criteria for early latent syphilis, namely no 4-fold/more increase in non-treponemal test titer (VDRL 1:4), no known symptoms of primary or secondary syphilis in the past year, and a history of husband having symptoms of primary syphilis more than 1 year ago. Early latent syphilis is diagnosed if the patient is asymptomatic for less than one year and has reactive serologic tests for syphilis. Late latent syphilis is diagnosed if the patient is asymptomatic for more than one year and has reactive serologic tests. In patients whose duration of infection cannot be determined with certainty based on the above criteria, late latent syphilis should be assumed and managed.[8]

Syphilis in pregnancy can be transmitted from mother to fetus during the primary, secondary, and latent stages. *T. pallidum* bacteria can cross the placenta from 10–12 weeks of gestation and the risk of fetal infection increases with gestational age. If a pregnant woman is infected with syphilis, there is a 70–80% chance of transmitting the infection to the fetus which can cause miscarriage, premature birth, low birth weight, stillbirth, or congenital syphilis. According to the Centers for Disease Control and Prevention (CDC) 2021, recommendations for syphilis screening in pregnant women include serologic testing for syphilis as early as possible at the first prenatal care visit or before the second trimester. In high-risk women, serologic testing can be done twice in the third trimester: once at 28–32 weeks of pregnancy, and once at delivery. Pregnant women who have not been screened are subjected to serological examination at delivery. Screening is recommended for women at high risk of infection during pregnancy and those living in communities or areas with high syphilis rates.[9,10,11]

In this case, the patient was given treatment in the form of intramuscular injection of benzathine G penicillin 2.4 million units with a 1-week interval with 3 doses given. This is based on the therapy recommendations from the CDC and the General Directorate of P2P, Ministry of Health of the Republic of Indonesia, namely a total dose of 7.2 million units repeated 1 week later for 3 consecutive weeks (2.4 million units each dose) for late latent syphilis, tertiary, or unknown history of previous infection.[5,12,13] The level of antibiotic must be achieved in serum with a duration of 7–10 days to cover the replication period which lasts for 30–33 hours. Until now there have been no reports of *T. pallidum* bacteria being resistant to penicillin. An alternative for pregnant women who are allergic to penicillin is penicillin desensitization. If desensitization is not possible, the following can be given:

- Erythromycin 500 mg 4×1 tablet/day, orally for 14 days[8,13,14]
- Ceftriaxone 1 gr 1×/day, intramuscularly for 10–14 days[8,14]

Erythromycin and azithromycin cannot penetrate the placental barrier, so pregnant women who are given therapy with these two drugs need to be given congenital syphilis therapy when their babies are born.[2,8,14]

Successful therapy in this patient was based on evaluation of VDRL and TPHA serology test levels. The patient received a total of 7.2 million units of benzathine G penicillin IM. Based on the recommendations of the Indonesian Ministry of Health, clinical and serological evaluations were carried out every 3 months for the first year (months

1, 3, 6, 9, 12) and every 6 months in the second year (months 18, and 24). Therapy was said to be successful if there was a decrease in VDRL/RPR titer ≥4× the titer before therapy. The decrease in titer was observed up to 6–12 months in early syphilis and 12–24 months in late syphilis and titer decline is observed until non-reactive or serofast. Therapy is said to have failed in early and late latent syphilis if complaints and clinical symptoms ofsyphilis are found, the titer does not decrease 4× within 12–24 months or the titer has increased ≥4 times since therapy was given (persistent for more than 2 weeks). In cases of failed therapy, refer to a venereology subspecialist for evaluation of possible causative factors.[2,8,9,15]

The prognosis of this patient is quo ad vitam ad bonam, quo ad functionam ad bonam, quo ad sanationam dubia ad bonam. According to the literature, *T. pallidum* is very sensitive to penicillin. Although therapy failure can occur, especially in patients with HIV, penicillin therapy is generally very effective in all stages of syphilis.[15,16]

Latent syphilis is defined as a serologically reactive infection in the absence of clinical manifestations. The diagnosis is typically established after the exclusion of primary, secondary, and tertiary stages.[9] It is further classified as early latent (<1 year since infection) or late latent (>1 year since infection or unknown duration). This classification is crucial because the potential for relapse and infectivity is higher in early latent cases, while late latent syphilis carries a persistent risk of vertical transmission during pregnancy.[10]

In the present case, the diagnosis of late latent syphilis was supported by the absence of clinical symptoms for more than one year and high serological titers (VDRL 1:64; TPHA 1:5120), consistent with diagnostic criteria established by the Centers for Disease Control and Prevention (CDC, 2021).[11] The patient's husband's untreated genital lesion 1.5 years

earlier also supported the likelihood of infection duration exceeding one year.

Vertical transmission of Treponema pallidum can occur during any stage of maternal infection, including latent stages, with a risk of 70–80% in untreated pregnancies.[12] The organism can cross the placenta as early as 10–12 weeks of gestation, leading to miscarriage, preterm birth, or congenital syphilis.[13] Screening for syphilis during pregnancy is therefore recommended at the first prenatal visit, again at 28–32 weeks, and at delivery in high-risk populations.[14] Early identification and timely treatment are essential to reduce maternal-fetal morbidity and mortality.

The recommended therapy for late latent syphilis in pregnancy remains benzathine penicillin G 2.4 million units intramuscularly once weekly for three consecutive weeks (total 7.2 million units).[11],[15] This regimen achieves sustained bactericidal levels, covering the replication cycle of T. pallidum (approximately 30–33 hours). No penicillin-resistant strains of T. pallidum have been documented.[16] For penicillin-allergic pregnant women, desensitization remains the only safe alternative, as macrolides such as erythromycin and azithromycin do not cross the placental barrier.[17]

The therapeutic outcome in this patient was favorable, demonstrated by a fourfold decline in nontreponemal titers within six months (from 1:64 to 1:16), meeting the CDC criteria for adequate serologic response.[11] The absence of new lesions or systemic manifestations further confirmed treatment success. Continuous serologic monitoring every 3–6 months for up to 24 months is recommended to detect potential relapse or reinfection.[18]

This case reinforces the importance of universal antenatal syphilis screening and adherence to evidence-based treatment protocols. A similar report from Queensland, Australia (Fowler et al., 2023), identified gaps in screening and treatment adherence as primary barriers to preventing congenital syphilis.[19] In Indonesia, the PERDOSKI Clinical Guidelines (2024) and the Ministry of Health have emphasized routine triple elimination screening (HIV, hepatitis B, and syphilis) for all pregnant women.[20]

From a public health perspective, this case highlights the need for improved partner notification, counseling, and integrated antenatal care to prevent reinfection and congenital transmission. Early diagnosis, appropriate therapy, and coordinated follow-up between dermatologists, obstetricians, and primary care providers remain key strategies for eliminating congenital syphilis in Indonesia.

CONCLUSION

This case emphasizes the importance of early detection and management of syphilis during pregnancy through universal antenatal screening. The successful treatment outcome observed in this patient, indicated by a fourfold decline in nontreponemal titers following benzathine penicillin G therapy, underscores the effectiveness of penicillin as the gold standard treatment for all stages of syphilis.

Timely diagnosis, partner screening, and consistent follow-up remain essential strategies to prevent congenital syphilis and its adverse outcomes. Integration of antenatal care programs with dermatology and venereology services can enhance early case detection and reduce vertical transmission rates in Indonesia.

Ultimately, strengthening education, surveillance, and treatment adherence among healthcare providers and patients is vital to support the national goal of eliminating congenital syphilis.

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