

CASE REPORT

Pregnancy With Early Latent Syphilis, A Reality In 21st Century : A Case Report And Literature Review

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ABSTRACT

Syphilis is a sexually transmitted disease caused by the spirochete *Treponema pallidum*. It is of special concern during pregnancy because can lead to adverse pregnancy outcomes and congenital syphilis. We retrospectively included female patient with laboratory-confirmed syphilis in East Java. Demographic, pregnancy record, clinical, radiological, laboratory, and treatment data were reviewed from medical record and health of both mother and child book. Clinical characteristics and outcome of patient were described. The patient was 40-year-old multiparous pregnant women was referred to the hospital at 40 weeks of gestation due to early latent syphilis. The patient was diagnosed during the last trimester and had not been treated, but no vulvar and anal genital wart was found. Patient was scheduled to urgent section caesarean but 1 hour after admitted to the hospital, patient had spontaneous delivery. A healthy son was born (3400 g /50 cm, 10 points Apgar score). Due to the lack of documentation regarding treatment of maternal syphilis, crystalline penicillin was administered to the newborn. Screening and early penicillin treatment are the most important factors that can eliminate complications related to the prenatal contagion with *Treponema pallidum*. Yet despite the lack of treatment or its inappropriate administration, the pregnancy complicated with maternal syphilis may end in a completely different way.

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Introduction

Syphilis is a bacterial sexually transmitted infection caused by *Treponema pallidum*. The disease remains the most common congenital infection worldwide.¹ The World Health Organization (WHO) estimates that, globally, 1.5 million pregnancies are affected by syphilis each year and up to 50% of those who are not treated will experience adverse outcomes such as congenital syphilis.² Syphilis infection during pregnancy related with miscarriage, stillbirth or neonatal death shortly after delivery.

Timely diagnosis and proper management of infection in pregnant women are important to prevent adverse outcomes. This study aims to describe cases of syphilis that occur in pregnancy, the lack of data and how the treatment will be given.

Case

Mrs. HR A 40 years old Malay housewife, Gravida 4 Para 2 + 1, came for an antenatal check-up at the obstetrics polyclinic of a hospital in East Java, Indonesia. The patient had been under control at the community health centre and currently has no complaints other than being close to delivery. According to the referral letter from the community health centre, the patient was diagnosed with early latent syphilis and was subsequently referred here for further management. She also did not complain of itching in the genital area associated with vaginal discharge. The patient was diagnosed during the last trimester and received no treatment. No vulvar and anal genital warts were found.

Routine blood tests including hepatitis B, human immunodeficiency virus (HIV) and syphilis serological tests were repeated. Serological test results for hepatitis B and HIV were negative.

However, rapid plasma reagin is reactive at 1:16 titration. The diagnosis of syphilis is confirmed by a positive syphilis from the immunoglobulin G (IgG) result. There was no previous history of syphilis, and there was no record of syphilis treatment from the community health centre. Her husband was counseled for syphilis screening but was turned down.

The patient was scheduled for immediate cesarean section but 1 hour after being admitted to the hospital, the patient had a spontaneous delivery. She gave birth to a baby boy at 40 weeks' gestation by spontaneous delivery with a birth weight of 3400 g, body length of 50 cm, and an Apgar score of 10 points. There are no clinical signs of congenital syphilis. The results of rapid plasma reagin for infants are unknown because they are not tested. He was discharged after three days in the ward. Post-partum follow-up was scheduled for mother and baby during control at the polyclinic.

Discussion

Globally, syphilis remains prevalent in Africa, South America, Southeast Asia and Eastern Europe.² If a pregnant woman has syphilis, mother-to-child transmission can occur, potentially causing serious adverse outcome including low birth weight, stillbirth and congenital syphilis.³ For this reason, infection remains part of the antenatal screening program. Only 40% of women with positive screening results require antibiotic treatment for the condition.⁴ This is because patients who screen positive may have an inadequately treated infection acquired before conception, a false-positive result, or an inflammatory condition.^{5,6} The stage of maternal syphilis affects the risk of transmission to the fetus as high as 100% in primary syphilis,

whereas the risk is much lower in early and late latent syphilis, with transmission rates of 40% and 10%, respectively.⁵

Syphilis can seriously make complicated pregnancy and result in spontaneous abortion, stillbirth, non-immune hydrops, intrauterine growth restriction, and perinatal death, as well as serious outcome in live-born infected children. While appropriate treatment for pregnant women often prevents these complications, the main obstacle is the inability to identify infected women and put them on treatment. First-trimester screening with non-treponemal tests such as the rapid plasma reagin test (RPR) or venereal disease research laboratory test (VDRL) combined with individual confirmation of being reactive with treponemal tests such as the fluorescent treponemal antibody absorption test (FTA-ABS) is a cost-effective strategy. Those at risk should be retested in the third trimester. Treatment during pregnancy should be with penicillin. In determining a penicillin regimen, the clinician must consider the stage of the mother's infection and the mother's HIV status. Patients allergic to penicillin should be sensitized before treatment. Despite proper treatment, as many as 14% will experience fetal death or give birth to an infected baby.⁷

Spirochetes of *Treponema pallidum* can cross the placenta and infect the fetus starting at about 14 weeks of gestation, and the risk of fetal infection increases with gestational age. However, the manifestations and outcomes of congenital syphilis are influenced by gestational age, maternal syphilis stage, maternal medication, and fetal immunologic response. Congenital syphilis can cause spontaneous abortion, usually after the first trimester, or stillbirth at term is found in 30 to 40

percent of cases, or premature, or full-term birth in a live baby but may have obvious signs of infection or have no symptoms at all once (about two-thirds of the time live births).⁸ Placental infection and decreased blood flow to the fetus are the most common causes of fetal death. Untreated women have about a 70% chance of fetal infection during the first 4 years of disease.⁹ In 35% of cases, infected fetuses are born alive with congenital syphilis. Low birth weight can be the only sign of infection. In fact about 60% of live births are asymptomatic at birth.⁷

In this patient, there were no signs of infection either in the mother or in the fetus, but further examination needs to be done to prevent the bad condition and the possibility of congenital syphilis being undetected during delivery. Adequate treatment of maternal infections is effective for preventing maternal-to-fetal transmission and for treating fetal infections. The treatment is Penicillin G, which is administered parenterally. In this case there is no problem in giving antibiotics. Treatment failure has been described in several case reports, particularly in patients with HIV infection, but no penicillin resistance has been documented in *T. pallidum*.¹⁰ The CDC recommends that pregnant women should be treated with a penicillin regimen appropriate for their stage of infection. In primary, secondary, and early latent syphilis, benzathine penicillin G 2.4 million units IM in a single dose is recommended.¹¹ Additional therapy may benefit pregnant women in some situations. Some authors suggest that a second dose of benzathine penicillin 2.4 million units IM be administered 1 week after the initial dose for women with primary, secondary, or early latent syphilis.¹² In late latent syphilis or latent syphilis of unknown duration, a total of 7.2

million units of benzathine penicillin G should be given, as 3 doses of 2.4 million units IM each at 1 week intervals.

Pregnant women with reactive serological tests for syphilis should be counseled about the possibility of harboring other sexually transmitted agents, and tested for these. The most important is the concurrent HIV infection. Data on concurrent syphilis and HIV infection are limited. Two prospective studies involving 178 non pregnant syphilis patients (95 HIV seropositive, 83 seronegative) found no clinical difference in clinical presentation, course of disease, and response to therapy, but there was a delay in serological improvement in patients with HIV after therapy. Despite the recommended penicillin regimen for pregnant women, as many as 14% will experience fetal death, or deliver a baby with clinical evidence of congenital syphilis.¹³ Although in these cases it is recommended to be treated with at least two doses of benzathine penicillin 2.4 million units within 1 weeks, the efficacy of this regimen in either preventing or fetal syphilis is unknown.¹⁴ Severely infected fetuses can be aborted even though the mother has been on therapy. Mothers who are infected within 4 weeks after delivery can still give birth to a newborn with the risk of exposure.⁷

Conclusion

In this case, due to lack of documentation regarding the treatment of maternal syphilis, crystalline penicillin was administered to the newborn. Early penicillin screening and treatment is the most important factor in eliminating complications associated with prenatal transmission with *Treponema pallidum*. The main factor that causes failure to prevent congenital infection is the

lack of prenatal care. In the United States, 98.7% of pregnancies ending in a live birth had at least one prenatal medical visit; in contrast, only 52% of mothers of infants with congenital syphilis reported having had at least one prenatal visit.⁷ The likelihood of seeking prenatal care was strongly related to age, marital and socioeconomic status, rural residence, and educational attainment.

Routine prenatal screening is the main line of defense against congenital syphilis. All pregnant women should undergo non-treponemal serological testing for syphilis during the first trimester. In areas with a high syphilis index, serological screening should be performed early in the third trimester and at the time of deliver. All cases of congenital syphilis can be prevented if the maternal infection is diagnosed and treated promptly. However, for this to happen, good treatment pathways must be in place and adequate resources must be available. This requires commitment from the government and strong program leadership. The WHO Millennium Development Goals to reduce mortality of children under 5 years of age by 66% and improve maternal health by 2025 present significant challenges and opportunities: prevention of congenital syphilis is an integral aspect of this goal and requires leadership action.

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Conflict of Interest

The author stated there is no conflict of interest

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