CASE REPORT

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Syphilis in pregnancy at Public Health Centre III North Denpasar

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ABSTRACT

Introduction: Syphilis is a sexually transmitted infection (STI) caused by the bacterium Treponema pallidum. Syphilis in pregnancy is often asymptomatic, so early detection of syphilis is needed to prevent a poor pregnancy outcome and transmission of infection to the baby.

Case: A 25-year-old woman, pregnant with her second child at 24 weeks of gestation, came without any health complaint for a routine prenatal check-up. On syphilis screening, reactive TPHA and RPR titer of 1:2 were found. The patient was diagnosed with syphilis infection in pregnancy. The patient has been treated with Benzathine Benzylpenicillin 2.4 million IU intramuscular injection once a week for 3 consecutive weeks.

Conclusion: Syphilis is a sexually transmitted infection that infects pregnant women. Treponemal transmission in pregnant women was detected early in the ninth week of pregnancy. The diagnosis of syphilis was made by dark-field microscopy, treponemal antibody tests (TPHA, FTA-ABS), and non-treponemal antibody tests (VDRL, RPR). Penicillin is the gold standard therapy for syphilis in pregnant women.

Keywords: syphilis in pregnancy, syphilis screening, sexually transmitted infection, STI.
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INTRODUCTION

Syphilis is a sexually transmitted infection caused by Treponema pallidum.[1,2] Syphilis is called "The Great Imitator" because this infection attack all organs of the body so that it resembles the clinical picture of many diseases. Syphilis is transmitted through sexual intercourse, blood transfusions and transmitted from mother to fetus. Nearly 1.4 million pregnant women were infected with active syphilis in 2008 and are at risk of transmitting the disease to their unborn babies. WHO states that syphilis is a high cause of mortality and morbidity during pregnancy.[3]

Syphilis in pregnancy incident based on the Center for Disease Control and Prevention (CDC) in 2015 was 1.8 cases per 100.000 pregnant women.[3] In 2017, Infectious Disease Control and Prevention Health Department of Indonesia data showed that 3.295 women were diagnosed with syphilis in pregnancy out of 39.660 women screened in antenatal care.[4] RSUP Sanglah data in 2014 showed that there were 20 new cases, 3 cases of primary syphilis, 11 cases of secondary syphilis and 6 cases of early latent syphilis. Syphilis in pregnancy is often asymptomatic, so early detection of syphilis is needed to prevent a poor pregnancy outcome and transmission of infection to the baby. Antenatal care is an important intervention in preventing the transmission of syphilis. This intervention is in line with the WHO's global strategy regarding the elimination of syphilis transmission, which increasing early access to maternal and neonatal care.[4] The following is a case of syphilis in a second-trimester pregnant woman. This case was reported to explain the clinical manifestation and its management and appropriate handling to prevent complications in pregnancy.

CASE

A 25-year-old woman came to the General Poli of Puskesmas III North Denpasar on July 15, 2019. The patient came for pregnancy control. The patient currently has no complaints, never had a painless genital sore. pregnant with her second child at 24 weeks of gestation. The first day of the last menstrual period was February 20, 2019, with estimated delivery of November 27, 2019. The patient never had benzathine penicillin therapy and any other kind of therapy. The patient denied a history of other systemic diseases such as heart disease, diabetes, asthma, medicine, food, high blood pressure, and family disease history.

Based on social history, the patient stated that she had sex at 17 years old for the first time. The patient works as a shopkeeper. Currently, the patient is pregnant with her second husband. In the first pregnancy of her first husband, the patient did not have antenatal care examinations. The patient's first child is 8 years old and growing normally without any abnormalities. The patient's first husband worked as a truck driver between cities and had a history of having sex with more than 1 sexual partner without using a condom. Based on physical examination,

the general condition was good. On the abdominal examination, had normal positive bowel sounds, gravidarum, TFU 4 fingers below the umbilical cord with positive FHR. On dermatovenerological status, there were no abnormalities/skin lesions on the whole body.

Laboratory examinations on July 15, 2019, showed blood type A, WBC 12,600 (4100-11100), RBC 4.13 million (3.90-5.20 million), hemoglobin 11.7 (12.0-15.2), hematocrit 40.0 (36.4-46.0), MCV 97 (83-96), MCH 28.3 (26.4-32.4), MCHC 29.2 (31.8-34.2). On urinalysis, urine protein was negative and urine glucose was negative. On serological examination, the results were reactive TPHA, reactive RPR with a titer of 1:2, non-reactive HBsAg, and non-reactive HIV. From the anamnesis, physical and laboratory examination, the working diagnosis was an advanced latent syphilis with G2P1A0 in 23-24 weeks pregnancy. The patient was treated by giving benzathine penicillin injection of 2.4 million IU intramuscularly, once a week for 3 consecutive weeks. The patient was required to invite her husband to do laboratory tests (TPHA and RPR)

THE ADVANCED OBSERVATION (July 26, 2019)

The patient came for control and had no complaints and skin lesions. On physical examination, the general condition was good. On abdominal examination, normal positive bowel sounds, TFU 4 fingers below the umbilical cord with positive FHR. On dermatovenerological status, there were no abnormalities/skin lesions on the whole body. The working diagnosis was following up the advanced latent syphilis with G2P1A0 in 24-25 weeks pregnancy. At this time, the patient had the second benzathine benzylpenicillin 2.4 million units intramuscularly and for the next control schedule, the patient will have the third benzathine benzylpenicillin injection on August 2, 2019.

THE ADVANCED OBSERVATION (August 6, 2019)

The patient came for control and had no complaints and skin lesions. On physical examination, the general condition was good. On abdominal examination, normal positive bowel sounds, TFU 4 fingers below the umbilical cord with positive FHR. On dermatovenerological status, there were no abnormalities/skin lesions on the whole body. The working diagnosis was following up the advanced latent syphilis with G2P1A0 in 25-26 weeks pregnancy. At this time, the patient had the third benzathine benzylpenicillin 2.4 million units intramuscularly. For the next control schedule, the patient will have a serological test. The patient's husband came to be examined, a 30 years old man, who currently had no complaints. On laboratory examination, showed that TPHA was reactive, RPR was reactive with a titer of 1:2, HIV was non-reactive. He was diagnosed with advanced latent syphilis. He was treated by benzathine benzylpenicillin injection 2.4 million units intramuscularly once a week for 3 consecutive weeks.

DISCUSSION

Syphilis is caused by Treponema pallidum, a microaerophilic and spiral-shaped. The infection is commonly transmitted through sexual contact, blood transfusions and can be passed from mother to child in pregnancy or during birth.[1] In pregnancy, Treponema pallidum is transmitted from the mother to the fetus through the placental capillary blood vessels. As a result, various clinical manifestations appear in the form of Adverse Pregnancy Outcomes (APOs) consisting of stillbirth, premature death of the fetus, low birth weight babies, prematurity, neonatal death, infection, or disease in newborns (babies with reactive serology). Early routine screening at antenatal visits is an important intervention in the prevention of mother-to-child transmission of syphilis. This intervention is in line with the second pillar of the WHO global strategy regarding the elimination of syphilis transmission, they are increasing early access to maternal and neonatal care.[2,3]

The prevalence of syphilis from 2013 to 2014 was 6.3 cases per 100,000 population, with an increase in women of 22.7% from the previous year. The highest prevalence of syphilis in women is in the reproductive age group, 15 to 44 years.[4] In this case, the patient was 25 years old, so it is following the stated epidemiology that the highest rate of syphilis in women is in the reproductive age group. Sexual transmission of syphilis occurs when spirochetes enter the body through microlesion on the skin or vaginal or anal mucosa through oral-genital or genital-genital contact with an infected partner. Primary and secondary syphilis have the highest probability of infection, single sexual exposure in individuals with primary syphilis has a 50 to 60% risk of transmitting syphilis. The transmission still occurs after the mucosal lesions have healed and also occurs transplacentally or via vertical transmission. The average incubation time after the transmission is 21 days.[4] In this case, the patient admitted that the first husband had free sex with many partners, which caused a high-risk transmission of syphilis. There are two classifications of syphilis, first early syphilis (less than one year) and the second advanced syphilis (more than 1 year).[5-7]

Early manifestations of syphilis are small macules, then become papules and ulcerate. Ulcers are usually single, painless, clean bottom, and relatively bloodless, although sometimes multiple and bilateral inguinal lymphadenopathies may occur. In men, the lesions are generally found on the coronal sulcus of the glans penis, in women the lesions are found on the vulva, vaginal wall, or cervix. The ulcer will disappear spontaneously within 3-8 weeks without leaving a scar.[8] Patients with untreated primary syphilis will progress to secondary syphilis, also known as the spirochete (bacteremia) stage. Systemic spread of spirochetes to other organ systems occur at this stage within 6 weeks to 6 months after the initial infection.

The main form of secondary syphilis is a skin rash that can be macular, papular, or papulosquamous on the palms of the hands and soles of the feet and spread throughout the body. The rash is usually accompanied by generalized lymphadenopathy, fever, headache, and malaise. In secondary syphilis condylomata, where these symptoms experience spontaneous remission and disappear in 2-6 weeks. If secondary syphilis remains undiagnosed and untreated, all manifestations of the disease that appear will resolve spontaneously and the patient will enter a latent phase that lasts for several years.[8]

Latent syphilis is divided into early

latent syphilis and advanced latent syphilis, with a dividing line, is 1 year after infection. During the latent phase, there are no skin or mucosal lesions. Therefore, the diagnosis was made based on serological results.[8] Vertical transmission has been reported in women with early and late latent syphilis, although transmission rates are significantly lower than primary and secondary syphilis.[9] Tertiary syphilis is generally considered the destructive stage of syphilis disease. Symptoms appear several years after the initial infection. Manifestations of tertiary syphilis in the form of destructive nodular ulcerative lesions called gummas, osteomyelitis, osteitis, stiffness, and motion pain accompanied by various signs of meningitis, seizures, decreased consciousness, various cardiovascular diseases, and neurosyphilis.[8]

In this case, the patient had no complaints. But, when the patient came for a routine pregnancy checkup, the screening found positive TPHA and RPR results. When adjusted for the stage of syphilis, this patient is diagnosed with latent syphilis where latent syphilis usually has no visible complaints. Prenatal screening and care for sexually transmitted infections (STIs) prevent adverse perinatal outcomes. Syphilis, chlamydia, gonorrhea, and HIV infection in pregnant women can cause death or severe morbidity in infants. Among pregnant women with untreated syphilis, an estimated 26% of pregnancies result in stillbirth and fetal loss, and another 12% in early neonatal death. Women should be screened for syphilis and HIV infection early in pregnancy at the first prenatal care visit to detect infection and initiate treatment before adverse outcomes occur. Screening for syphilis should be performed in all pregnant women to treat and prevent maternal-to-fetal transmission. Every pregnancy with STIs, history of dealing with multi partners or with HIV, it is recommended to have an examination for syphilis.[9] Early treatment of syphilis, in the first trimester and during the beginning of the second trimester, prevents a poor pregnancy caused by inter utero infection. Pregnant women with syphilis should be rescreened at 28-32 weeks of pregnancy to detect new infections.[10] Every pregnant woman who has a fetal death after 20 weeks of pregnancy should be tested for syphilis.[11] In this case, patients were screened at 22-24 weeks of pregnancy. So it is possible to prevent a poor pregnancy outcome caused by an infection in utero.

There are several screening strategies based on WHO in screening and management of syphilis in pregnancy, strategy A: single on-site Rapid Screening Test (RST) followed by treatment if the results are positive, strategy B: on-site Rapid Plasma Reagent (RPR) examination single followed by treatment if positive, Strategy C: On-site RST examination followed by treatment (if positive) with the first dose and RPR test, strategy D: examination: off-site RPR or VDRL followed (if positive) with TPPA test or TPHA test and followed (if positive) treatment.[12] In this case, screening and management of syphilis in pregnancy were using strategy D, with TPHA and RPR where the results were reactive TPHA and reactive RPR with a titer of 1:2.

Penicillin is the gold standard therapy for syphilis in pregnant women. The purpose of penicillin therapy in pregnant women is to treat maternal disease, prevent transmission to the fetus and treat syphilis that has occurred in the fetus. The syphilis treatment in pregnant women follows a regimen that is appropriate to the stage of the disease.[12,13] There are 4 recommendations based on WHO in pregnant women with syphilis.[14] First, in pregnant women with early syphilis (primary and secondary) WHO guidelines recommend benzathine penicillin G 2.4 million units of a single dose intramuscularly.[15]

Second, in pregnant women with early syphilis, WHO more recommends benzathine penicillin G 2.4 million units intramuscularly than giving procaine penicillin 1.2 million units intramuscularly once a day for 10 days. But, when benzathine or procaine penicillin cannot be used (due to penicillin allergy) then WHO recommends using a regimen of erythromycin (with close supervision) 500 mg orally four times a day for 14 days or ceftriaxone 1g intramuscularly once daily for 10–14 days or azithromycin 2g once orally. In pregnant women with advanced latent syphilis (history of infection more than two years), WHO recommends benzathine penicillin G 2.4 million units intramuscularly once weekly for three consecutive weeks instead of giving procaine penicillin 1.2 million unit injections intramuscularly once daily for 20 days.[15] A case report is the first step of the study of disease. It links clinical and epidemiological studies. This study can be used for further research on syphilis infection in pregnancy. The lack of this study was the data sources, that were only based on the reported cases.

CONFLICT OF INTEREST

There's no conflict of interest regarding this publication

ETHICS IN PUBLICATION

Patient approval regarding information and photography usage for publication and education was obtained.

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Author ODN contributes in literature review, examination and follow up of the patient, contruct manuscript and publication. Author GAVMG contributes in examination, treatment, and follow up examination of the patient.

CONCLUSION

Syphilis is a sexually transmitted infection (STI) caused by the bacterium Treponema pallidum. Syphilis in pregnancy is often asymptomatic. Advanced latent syphilis case has reported in second-trimester pregnant women. The diagnosis was made based on the history, physical and serological tests of VDRL and TPHA. From the anamnesis, there were no complaints, including the absence of skin lesions/disorders throughout the patient's body. The patient's husband also had no complaints, and no lesions were found on his body. However, when the patient came for a routine pregnancy check-up, the results of the serological examination were positive for TPHA and RPR. The results of the serological test for the patient's

husband also found positive TPHA and RPR results. The patient and her husband had benzathine benzylpenicillin 2.4 million units intramuscularly once a week for 3 consecutive weeks. On the follow-up session, there were no new lesions.

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