Neglected Tuberculosis in Pregnancy, What Should We Do?

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Abstract

Tuberculosis is a global problem infectious disease, especially in developed country and Indonesia is a one of high burden country TB. We managed two cases TB in four months, both cases are referred from district hospital and describe pregnancy outcomes in patient with tuberculosis. The first case described about TB sequel affected mother and baby. Patient had been infected by M. tuberculosis 4 years ago and already had TB treatment but she still had a signs and symptoms TB and the condition had been worse when she got pregnant, and she delivered low birth weight baby. The second case showed how TB can killed both mother and baby indirectly. Patient had been infected by M. tuberculosis before she got pregnant, and her family decided to stop TB drug because afraid of the effect of TB drugs to her pregnancy. Her condition became worsen and she became unconciousness. TB infection showed varied results maternal and neonatal morbidity. The prognosis depends on the complication of TB and treatment compliance. Untreated TB in pregnancy lead mortality in both mother and baby. It requires support and attention from health care, society, and government.

Key words: Tuberculosis, pregnancy

Preface

Indonesia is one of the “high burden country” (HBC) based on data from WHO recorded since 2002 to 2015 for the category of most TB patients reaching 10,000 cases of TB / year; 1000 cases of multidrug resistance TB; and TB / HIV. (1, 2) Tuberculosis in pregnancy is one of the leading causes of indirect maternal death, undiagnosed tuberculosis can cause 40% of deaths in pregnant women this figure increases to 300% in pregnant women with tuberculosis-infected HIV and WHO records there are approximately 3.3 million women who are infected with tuberculosis worldwide (1, 3-5). The diagnosis of tuberculosis in pregnancy has its own difficulties, as clinical symptoms that result from TB infection and pregnancy may overlap and there may be doubt with other possible infections. Many studies showed infections of tuberculosis in pregnancy affect the mother and fetus in the womb including premature birth, intrauterine growth restriction, tuberculosis endometritis, and rarely case of the congenital TB. (6)

Case Report 1

Mrs. 33-year-old was referred from West Aceh district hospital with TB in pregnancy. Patients’ chief complaint was shortness and difficulties of breath since one week so that patients are treated in hospital. During pregnancy shortness of breath is, patient also often
experienced with cough with phlegm and it complaints sometime disappear. Blood cough is denied, fever is absent. Patients G3P2 currently admitted to 9 months of pregnancy based on first trimester ultrasound at 12 weeks gestation, weight gain from early pregnancy to 9 months of age only 4kg with BMI 16.8 kg / m² and based on ultrasound during antenatal examination 3 times, Found signs of symmetrical type of inhibited fetal growth.

Patients is a housewife and her husband is a contract workers in government offices, have a history of pulmonary tuberculosis and claiming to have completed anti-tuberculosis drugs for 6 months in 2013. But after that the patient admitted losing her weight, and often feel shortness of breath, after 6 Months treatment or during the course of treatment, she never performed sputum examination. The patient’s brother suffered from tuberculosis with pleural effusion in 2012, but according to the patient after completing of the treatment for nearly a year, the weight of the patient’s brother continues to increase but the patient didn’t feel the same thing.

Upon admitted at Zainoel Abidin Hospital, tachypnea was obtained 28x / min, with saturation of O2 96-97% with O2 nasal cannula 4L / min, tachycardia 109x / min, physical examination obtained asymmetrical chest with the impression of left chest left behind during inspiration and expiration, Left stem fremitus decrease and dimmer during percussion, with the discovery of rough wet rhonchi on the left and right lung, no murmur and gallop found on heart examination. Obstetric examination found early rupture of membranes of amniotic fluid, CTG category 1, and from ultrasound obtained estimate of fetal weight of 2015g, SDAU 2.67 and oligohydramnios with amniotic fluid index 2. Laboratory testing obtained mild microcytic hypochromic anemia with HB 9.2 g / dL. Sputum smear examination was negative and sputum culture was not performed, and thoracic x-ray found infiltrate in right lung and massive connection in left lung due to destroyed on the left lung dd / atelectasis. Patients decided not to be given anti-tuberculosis drug and get prophylactic antibiotics because of premature rupture of membranes.

The patient then performed cesarean section and sterilization tube, subsequent treatment involving obstetric and gynecology division, and pulmonology for 5 days, the condition of dyspnea and cough become better during treatment. Born baby boy 2300g, AS 8/9, ballard score according to 38 weeks pregnancy. Perinatology decided to address the infants in NICU because of intercostal and suprasternal retraction, infants were observed for 2 days, and received prophylactic INH, the infant is also given exclusive breastfeeding.
Case Report 2

Mrs. 25 age years old referral from Pidie District Hospitals with G2P1 pregnant 32 weeks fetal singleton live head presentation, mothers with loss of consciousness since 4 hours at home before being taken to Pidie hospital, beginning with talking inconsequential then no response with stimulus. Previously the patient had a high fever since one month, accompanied by cough with phlegm that is not reduced even though the patient had taken cough medicine and fever medicine from midwife. Patients suffering from pulmonary tuberculosis, diagnosed 9 months before entering the hospital or from 3 months before pregnancy based on sputum examination, then received anti tuberculosis drug therapy but only about 2 months drunk the patient then known to be pregnant, so stop taking anti-tuberculosis drugs on their own because fear of endangering the baby in the womb. The patient's husband admitted that the midwife who checks the patient's pregnancy knows the patient has pulmonary TB and provides a multivitamin. During pregnancy never go to a gynecologist, and never do an ultrasound.

Upon arrival at dr.Zainoel Abidin Hospital, patient awareness was apathetic, tachycardia 145x / min, BP 80/50 mmHg, tachypnea 35x / min oxygen saturation 92-95% with oxygen mask, temperature 39.2°C. Physical examination found, isochoric pupils, in the lungs came rhonchi wet roughly filled the entire lung field, accompanied by wheezing in the left lung, cold extremities with Babinski reflex. Obstetric examination fundus height 21 cm, EWF 1200 g, fetal heart rate 165x / min. Laboratory results are 17,500 / μL leukocytosis, hypoalbuminemia 2.3 mg / dL, and respiratory acidosis. Patients diagnosed with pregnant G2P1 32-33 weeks, singleton live head presentation, with loss of consciousness due to meningoencephalitis TB dd / sepsis shock, and pulmonary TB with drop-out criteria.

Patient treated in ICU with ventilator for 3 days with norepinephrine and dobutamine support. On the first day of treatment found the fetus died in the womb and on the second day patient had of spontaneous delivery without any medical induction of labor. Baby was born with body weight 1000 g and AS 0/0. The patient died due to respiratory failure and sepsis due to pulmonary tuberculosis 32 hours post partum.

Discussion

Tuberculosis is one of the most non-obstetrics causes maternal death, it kills about 500.000 women every year during their reproductive years. In 2014 Indonesia as a high burden country has about 176.677 people (39.7% women) with TB disease and the annual rate of tuberculosis in Indonesia was 399/100.000. Aceh province ranked 8th most TB disease in Indonesia and has 1.429 women with TB disease.(7) Tuberculosis disease is associated with socioeconomic status, living condition, poverty and low education, and it is still the most problem in developing country and rapid growing cities with overcrowding. The contributor factors are importance to distinguish between conditions that affected by the disease, including new cases, multi drugs resistant strains of TB, prevalence of co-infection with HIV, and social economic developments affecting access to medical care. The data still showed TB as remains s global emergency and become major public health challenges worldwide. Many programs are made to reduces the incidence of TB such as directly observed treatments (DOTS), vaccination, and education. Indonesia still fight for this infection disease.(1, 7, 8)

TB is an infectious disease caused by Mycobacterium tuberculosis acid-resistant bacteria, the disease is infectious enough, spread by air (droplet sputum pulmonary tuberculosis patients), this disease can affect the lungs, and also other organs outside the lung subsequently known as extra-pulmonary TB. There are active TB infection and latent TB
infection. Patient with active TB infection present of signs, symptoms or proof of active disease by culture sputum. The signs and symptoms such as cough, lethargy, dyspnea, malaise, fever, sweating, weight loss, hemoptysis and is a late finding. Diagnosis the latent TB based on tuberculin test or interferon gamma-release assay (IGRA) with absence of signs and symptoms. Accurate diagnostic of TB in pregnant women is difficult because of signs and symptoms overlapping between pregnancy physiology changes and infectious of TB or other non-communicable disease. WHO estimate that over 3 million active TB cases are missed and need to found, and it is probably higher in pregnant women.\(^1, 6, 8\)

Tuberculosis on pregnancy depend on many factors including severity of the disease, site of TB (pulmonary or extra pulmonary TB), HIV co infection, gestation at diagnosis, and treatment initiation and compliance. Women with TB has been reported to high risk incidence of abortions, preeclampsia, postpartum hemorrhage, difficult labor, and acute respiratory failure, and cause of death three times greater in pregnancy women. TB has many implications on maternal health, including nutritional deficiency, prolong treatment that influence maternal physical and mental health, and TB sequel influence also maternal psych and weakness, side effect of TB treatment also make uncomfortable for patient socioeconomic support that TB could lead to antenatal hospital admission. TB also affected successful pregnancy after TB treatment, some study showed women often need in vitro fertilization and embryo transfer to get pregnant. TB also affected to the baby including IUGR, preterm labor, low birth weight, and congenital TB. Some experience in India told that TB could lead fetal distress during labor and perinatal mortality five-fold higher in pulmonary and extrapulmonary TB.\(^6, 9, 10\)

During pregnancy, TB treatment is not altered. Rifampin, isoniazid, pyrazinamide, and ethambutol are not teratogenic and were recommended by WHO during pregnancy. Streptomycin has been reported associated with infant hearing loss so it is contraindication in pregnancy. Latent TB treatment is isoniazid 300mg daily for six to nine month. There are still debated about deferring TB treatment for latent TB infection, but not for active TB infection. Delayed treatment can bring higher risk of morbidity and mortality for mother and baby, and pose infection to the population.\(^6, 10\)

The most important thing is to diagnosis TB during pregnancy. The development of strategies for avoiding delayed diagnostic require multidiscipline systems, government, non-government, health personal, and social environment support. The common cause of delay in diagnostic were late presentation and non-specific symptoms that in some study showed mean interval between onset of symptoms to diagnostic approximately 107 days (almost 4 month).\(^11\). So, it needs good screening for high prevalence TB burden including find out the people who had contact with active TB infection;\(^11\) HIV infection, living or working in setting with TB is common such as hospital, jail, shelter; injection drug use, immunocompromise, diabetes, significant underweight/ malnutrition. One of screening method is tuberculin skin test and it is safe in pregnant women and pregnancy does not altered the result. This test best offered among high risk person. Chest x-ray can be performed during pregnancy with abdominal apron if it is necessary. Active TB infection screening by sign and symptom of TB disease and sputum examination.\(^9, 12\)

Nutrition and welfare associated with socioeconomic contributed to decline infectious disease. Health system institutional, government and political strategy have big impact against tuberculosis. Aceh province has 4,509 midwife and 153 obstetrics and gynecologist.\(^7\) Although it has enough quantity of personal health care but it do not eliminate probability barrier to health care. A study by Uwimana, et al, 2012 showed that probability of health system barrier related prevention of TB infection and treatment
including structure and organizational culture; management, planning and power issues; unequal financing; and human resource capacity and regulatory problems are require integration and collaboration to remove barrier in health care.\(^{(13, 14)}\). Antenatal care and screening TB may both be important to reduce morbidity due to tuberculosis. In some studies suggest that failure to control TB due to failure on part of health care provider. Common faults include poor prescribing practices, an interrupted supply of drugs, financial problems, and arrogant and patronizing behavior of health care staff and the long distances to get health care facilities.\(^{(4)}\)

**Conclusion**

Neglected tuberculosis disease among pregnant women maybe not a rare case, due to difficulties on making diagnosis. High degree of clinical awareness and availability of tuberculosis diagnostic test are needed to screen TB on pregnancy. Preventive programs are priority to stop spread of TB infectious. Education and primary health care training must be considered among a health care in rural and high risk TB disease. TB drugs during pregnancy are safe and one of methods to eradicate TB disease and spreading to population.

**References**