Volume : 3 | Issue : 10 | October 2014 • ISSN No 2277 - 8179

Research Paper

A case report: Twin pregnancy Patient with Tuberculosis

Medical Science

KEYWORDS : twin pregnancy, tuberculosis, spinal anaesthesia.

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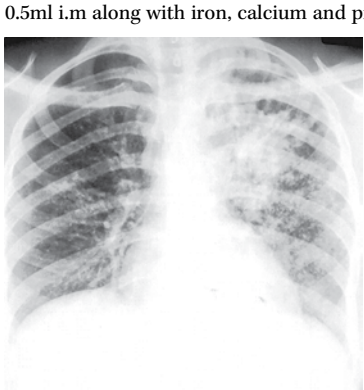
ABSTRACT

Tuberculosis is an increasingly greater challenge for the obstetric care provider. Missing an active case of tuberculosis can be a lethal mistake for the care provider and the patient if the organism is resistant to several antibiotics. The effects of tuberculosis on pregnancy, and conversely, of pregnancy on the course of tuberculosis, have varied greatly throughout history. Current medical opinion holds that pregnancy and TB do not affect each other's course, but that active tuberculosis has adverse obstetrical and neonatal outcomes.3 The clinician must weigh the risk of dissemination in neonate and mother (about 1 to 2% for the mother) vs the risk of adverse effects from the administration of medication. This case shows that a positive outcome for the neonates are possible with the use of medication.

Case report

We report a case of a 24 year old female primigravida with six months of amenorrhea, who came for a regular ANC registration and checkup. Patient had a history of dry cough and fever for 2 months, and weight loss and night sweats for 1 month with no hemoptysis. On detailed hisory she gave a positive history of being in contact with a family member who suffered from Pulmonary koch's a year back. The findings of her physical examination were unremarkable except for a body weight of 44 kg and height of 1.5 mt. (body mass index, 19.5 kg/m^2).

On examination, her temperature was 39°C. On auscultation of chest, breath sounds were normal, and there were no crackles, rales, or rhonchi. Per abdomen uterus was 26-28 weeks size and two FHS were present. The patient was advised admission along with chest X-ray with abdominal shield. abdominal shield, anomaly scan, basic blood investigations, Monteux test, serology test, sputum AFB, urine routine. Patient was advised physician and respiratory medicine reference. She was given inj tetanus 0.5ml i.m along with iron, calcium and protein powder.



On chest-X ray left upper lung cavity and infiltrates was seen in the left lung. Sputum samples were sent for acid-fast bacilli testing, which showed their presence. Daily antituberculous therapy was initiated with rifampin 600 mg, isoniazid 300 mg and ethambutol 700 mg. One smear-positive specimen was immediately processed for susceptibility testing after communicating with the mycobacteriology laboratory.

At 28 weeks of pregnancy, patient's symptoms and appetite were improved. She was regularly followed up every two weeks. The patient was treated for 8 weeks. Her membranes ruptured spontaneously at 35 weeks' gestation. The ultrasound report showed first fetus with breech presentation and second fetus with transverse lie.

Patient was prepared for emergency caesarean section and after a thorough pre-anaesthetic evaluvation patient was planned for spinal anaesthesia as the patient was haemodynamically stable with normal coagulation profile. Electrocardiogram, pulse oximeter, and non-invasive blood pressure monitors were attached. Two wide bore cannulas were secured on bilateral upper limbs. Spinal anaesthesia was given at L4-L5 inter-vertebral space with the help of 27G spinal needle, 2.0 ml of 0.5% hyperbaric solution of injection bupivacaine was injected after positive aspiration of cerebro-spinal fluid. T6 sensory level was achieved. Emergency caesarean section was performed via Pffenestiel incision. Both the babies were healthy and immunized. Newborns were separated from the mother. The placenta was normal on pathology examination. The infant's tuberculin skin test and three nasogastric aspiration cultures were negative for TB. Patient was discharged on post operative day 7 after suture removal. Following delivery, the patient continued to receive the antituberculous therapy.

Discussion

Mycobacterium tuberculosis (MTB) is a small, aerobic bacillus within the family Mycobacteriaceae, which also includes Mycobacterium bovis, Mycobacterium africanum and Mycobacterium microti. All species possess cell walls laden with lipids and waxy substances, which enable them to elude typical Gram stain. The term acid-fast arises from observations pertaining to two different commonly utilized staining mechanisms: carbol fuchsin (Ziehl-Neelsen and Kinyoun) and a fluorochrome method which uses auramine-O or auramine-rhoda mine. Once stained, bacilli retain their color even after an acid-alcohol wash, and are thus referred to as 'acid-fast'.[1,2]

Opinions regarding the effects of tuberculosis on pregnancy, and conversely, of pregnancy on the course of tuberculosis, have varied greatly throughout history. Current medical opinion holds that pregnancy and TB do not affect each other's course, but

that active tuberculosis has adverse obstetrical and neonatal outcomes.[3]

The natural history of TB was studied in 250 pregnant women with 370 pregnancies prior to the advent of effective treatment.[4] None of the women died during pregnancy, but 24 spontaneous abortions (6.5%) occurred. None of the infants developed congenital TB, and cervical TB was diagnosed in one pregnant woman. Although the literature reports > 176 cases of congenital TB,[5] the prevalence is < 1% for the offspring of untreated mothers.

Compared to the general public, signs and symptoms are no different for pregnant women, but diagnosis is often delayed. Manifestations of active TB depend on the site, which for most people is pulmonary, although the bacterium may attack any part of the body, including the lymphatic, genitourinary (especially damaging in females), musculoskeletal, central nervous, gastrointestinal and cardiac systems. Manifestations of pulmonary TB include cough, weight loss, fever, fatigue and malaise, hemoptysis, night sweats and chest pain. The non-specific nature of these symptoms, as well as the often ill-informed reluctance to perform radiographic testing in pregnancy, presents a diagnostic challenge to physicians. For these reasons, health care providers must be vigilant to consider this diagnosis in pregnant patients.[3]

Health care professionals caring for pregnant women with TB ideally should consult with a knowledgeable pulmonary or infectious disease colleague for advice and guidance, especially if comorbid diseases and conditions exist or are suspected to exist, such as HIV infection or MDR or XDRTB. Tripathy and Tripathy[6] concluded in a prospective study that no statistical differences existed between pregnant women divided into TB-positive women who received antituberculosis chemotherapy throughout pregnancy and non-TB infected same sex controls in terms of outcomes of gestational duration, occurrence of preterm labor, or congenital anomalies of their babies.[6] The CDC concurs that most first-line agents for tuberculosis are safe to use during pregnancy, even though they do cross the placenta.

Tuberculosis is an increasingly greater challenge for the obstetric care provider. Missing an active case of tuberculosis can be a lethal mistake for the care provider and the patient if the organism is resistant to several antibiotics. The obstetrician should have a low threshold for preforming a tuberculosis skin test (Mantoux Test) on pregnant women, especially those with household tuberculosis contacts, respiratory symptoms, or members of high-risk populations, as was the case with our patient. Treatment was clearly indicated to curtail weight loss; to terminate a source of transmission; to avoid dissemination, mycobacteremia, meningitis, or death for the mother; to decrease the risk of congenital TB; to protect the health-care workers in the delivery room; and to decrease the separation time between mother and newborn.

The CDC states that untreated active TB imperils a pregnant woman and her baby more than the treatment itself[7]. Medications contraindicated in pregnancy include streptomycin (concerns of fetal hearing loss); kanamycin and amikacin (risks of nephrotoxicity and congenital hearing loss); capreomycin (risks of nephrotoxicity and congenital hearing loss); and, finally, the fluoroquinolones (due to teratogenic effects)

Tuberculosis during pregnancy is treated with isoniazid, rifampin and ethambutol for 6 months. DOT is recommended to improve compliance. A team approach (*i.e.* obstetrician, infectious disease specialist, and public health nurse) maximizes the likelihood of successful therapy. As long as the infant is receiving prophylactic isoniazid and the mother has been under therapy for more than 6 days, the infant may breast-feed while the mother is receiving her four-agent antibiotic therapy. The mother and infant should be monitored for hepatitis and pro-vided with prophylactic Pyridoxine and vitamin K therapy.

The patient is educated about compliance, hepatotoxic drugs and medications, and the signs and symptoms of hepatitis. Isoniazid blocks the conversion of substrate to pyridoxal phosphate and increases the urinary excretion of vitamin B_6. Deficiency of vitamin B_6 is associated with developmental defects in laboratory animals and a pyridoxine responsive-peripheral neuropathy. Because pregnancy is associated with low pyridoxine levels, 50 mg/day of vitamin B_6 is recommended during isoniazid therapy.[8]

Conclusion

Tuberculosis during pregnancy is treated with isoniazid, rifampin and ethambutol for 6 months. DOT is recommended to improve compliance. A team approach (*i.e.* obstetrician, infectious disease specialist, and public health nurse) maximizes the likelihood of successful therapy. The mother and infant should be monitored for hepatitis and provided with prophylactic Pyridoxine and vitamin K therapy.

The clinician must weigh the risk of dissemination in neonate and mother (about 1 to 2% for the mother) vs the risk of adverse effects from the administration of medication. This case shows that a positive outcome for the neonates are possible with the use of medication.

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