Clinical and ethical issue regarding cesarean section in HIV young woman with severe tuberculous disease

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Abstract

We present a case of a 21-year-old human immunodeficiency virus (positive woman), diagnosed with tuberculosis meningoencephalitis during the second month of pregnancy. Although the patient was advised to stop pregnancy, she declined it and delivered at 30 weeks by caesarean section. Death occurs in both the mother and the neonate.
Keywords: *caesarean section, death, delivery, acquired immune deficiency syndrome, tuberculosis meningoencephalitis*

Introduction

The issue of tuberculosis (TB) during pregnancy has new implications in the human immunodeficiency virus (HIV) era. In pregnant women co-infected with both HIV and *Mycobacterium tuberculosis*, maternal mortality is increased by over 50%[(1)]. TB treatment of HIV immunocompromised pregnant women should be initiated whenever the suspicion of TB is moderate to high. TB therapy is complicated by the challenges of adherence, multidrug regimens and overlapping side effects from both TB and antiretroviral treatments[(2-4)]. The effects of TB on newborn include low birth weight and increased neonatal mortality[(5)]. The drugs used in the first TB regimen cross the placenta but do not have harmful effects on the fetus.

Case report

We present a case report of a 21-year-old Caucasian woman at her first pregnancy. Her medical history revealed HIV infection since she was 2 years old and 14 years later, treatment for lymphadenitis TB (Table 1). Her adherence to antiretroviral regimens (Table 2) was initially poor and worsened further after she became pregnant. On March, this year she was admitted to Constanta Clinical Infectious Diseases Hospital (CCIDH), Romania, with high fever (38-39^{0}C), weight loss, persistent dry cough, right cervical and submandibular painful adenopathy. Sputum examination for acid-fast-bacilli was positive, and transfer to Constanta Clinical Chest Hospital was carried out. Acute miliary TB was established, directly observed therapy initiated and recommendation for therapeutic abortion was established. The patient refused hospitalization, abandoned TB therapy and, after 1 month, in April, was readmitted in CCIDH with worsening, illness intermittent high fever, malaise, loss of appetite, marked asthenia, vomiting, headache, photophobia and coughing. Physical and cerebrospinal fluid exams suggested meningoencephalitis TB (Table 3). Daily antituberculous treatment was restarted with mycobutin, isoniazid, ethambutol and pyrazinamide. On May, the patient left the hospital, without medical permission, stopped therapy again, and, after 20 days, came back for medical care. Streptomycin was added to previous drugs, in order to prevent the death. For progressive disturbances of consciousness, in June, one month later, she was transferred to the Obstetrics Clinic for Caesarean section at 30 weeks of pregnancy. A male fetus small-for-gestational-age (weight 1,000 g) was born, with an Apgar score of 4, and survived for only five days. Multiple vital organ hemorrhages were observed postmortem. The mother died one week later, and postmortem diagnoses were: acute disseminated miliary TB with meningoencephalitis, tuberculoma of the brain; pulmonary edema; acute interstitial nephritis; cardiomyopathy and atrophic gastritis.

Discussion

The prognosis for both TB and HIV co-infection in pregnancy is very poor. Non-compliance with treatment worsens the prognosis[(5)]. Other obstetric complications reported in TB/HIV co-infected women include a higher rate of spontaneous abortion, premature birth, and suboptimal weight gain in the neonate[(6-8)].

Having in view that many studies showed that TB/HIV co-infected pregnant women presented an increased risk of poor outcome for both mother and new born, we believe that the best therapeutic choice should be the early interruption of pregnancy. In support of this decision, comes the issues of non-adherence to therapy and the severity of AIDS related TB disease versus the lower risk to the mother

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Table 1 Patient medical history[2]

Entry	Disease	Year
1.	Left brachial herpes zoster	2004
2.	Chronic hepatitis type B	2004
3.	Oral thrash	2004
4.	Pulmonary TB	2004
5.	Lymph node TB	2004; 2009
6.	Recurrent pneumonia	2005 - 2009
7.	Generalized lymphadenopathy	2006 - 2009
8.	Thrombocytopenia	2008
9.	Cytomegalovirus infection	2008

Table 2 Antiretroviral regimens[2]

Entry	Antiretroviral regimen	Period
1.	Nevirapine + Zidovudine/Lamivudine	2004
2.	Lopinavir/ritonavir + Zidovudine/Lamivudine	2005 - 2011
3.	No Antiretroviral regimen	September 2009 - January 2011
4.	Lopinavir/ritonavir + Zidovudine/Lamivudine	January - April 2011
5.	Lopinavir/ritonavir + Zidovudine/Lamivudine + Enfuvirtide	April 2011

associated with abortion. The abortion issue comes into conflict with one of the fundamental principles of medical ethics, patient autonomy. According to this ethical principle, any patient has the right to make health decisions after the physician presents all therapeutic benefits and risks[9].

Although the first-line of anti-tuberculosis medication use is safe during pregnancy[10-11], there is controversy regarding rifampicin, considered to be responsible for bleeding in newborns. Our patient did not receive rifampicin, although the newborn had evidence of bleeding in the vital organs.

Knowing its teratogenic effects, usually, streptomycin is not recommended in pregnant women[11]. It could, however, be useful in severe and progressive disseminated TB disease, although other studies used streptomycin without any reported side effects[12] being in accordance with our reported case.

Table 3 Cerebrospinal fluid changes[2]

CSF* findings	21.04.2011	23.06.2011
Colour	Clear	Opalescent
Number of cells/mm^3	70	250
Polimorphonuclears %	20	50
Limphocyte %	80	50
Pandy reaction	+	++
Albumin level (Normal range: 0.2 g‰)	0.33	0.66
Glucose level (Normal range 0.4 - 0.7 g‰)	0.14	0.47
Clorite level (Normal range 7 - 7.5 g‰)	7.01	6.42
Cultures	Koch bacilli positive	Koch bacilli positive
China inck stain	Negative	Negative
Ziehl Neelsen stain	Negative	Negative
Gram stain	Negative	Negative
Viral load (copies/mmc)	270554	-

**cerebrospinal fluid*

Conclusions

In the case of TB/HIV co-infected woman, the decisions to continue the pregnancy and further the abandonment of therapy lead to unfavorable evolution and death for both mother and baby. Unfortunately, efforts by the multidisciplinary medical team including infectious diseases, obstetrician, psychologist and so on, failed to change attitudes of this very difficult and non-compliant patient. ■

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