Original Research Paper

Volume - 16 | Issue - 04 | April - 2026 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Nursing/Pediatrics

INFANTS BORN TO MOTHERS WITH TUBERCULOSIS: A CASE SERIES

Dr. Deepali Deogune	Department of Pediatrics, HBT Medical College and Dr. R. N. Cooper Hospital Municipal General Hospital, Mumbai 400056, Maharashtra, India
Dr Dhara Shah	Department of Pediatrics, HBT Medical College and Dr. R. N. Cooper Hospital Municipal General Hospital, Mumbai 400056, Maharashtra, India
Dr Baraturam Bhaskara	Department of Pediatrics, HBT Medical College and Dr. R. N. Cooper Hospital Municipal General Hospital, Mumbai 400056, Maharashtra, India

ABSTRACT Tuberculosis (TB) in pregnancy continues to pose a significant public health challenge, particularly in developing countries such as India. The disease is associated with adverse perinatal outcomes, including preterm birth, intrauterine growth restriction, and low birth weight. Congenital tuberculosis, though rare, can occur due to transplacental or perinatal transmission. This case series describes seven neonates born to mothers with pulmonary or extrapulmonary TB who were receiving antitubercular therapy (ATT) during pregnancy. The series highlights clinical profiles, neonatal management, and outcomes to emphasize the importance of early maternal treatment and neonatal intensive care in optimizing survival.

KEYWORDS : Tuberculosis, Pregnancy, Neonate, Prematurity, Low Birth Weight, Antitubercular Therapy.

INTRODUCTION

Tuberculosis remains one of the leading infectious causes of maternal and perinatal morbidity and mortality worldwide. Pregnant women with tuberculosis are at increased risk of obstetric complications such as anemia, preterm labor, and intrauterine growth restriction (IUGR), while neonates are predisposed to low birth weight and respiratory distress (1,5).

Vertical transmission of Mycobacterium tuberculosis is uncommon but may occur either transplacentally via umbilical vein dissemination or through aspiration or ingestion of infected amniotic fluid during delivery (3,6).

Early diagnosis and initiation of maternal anti-tubercular therapy (ATT) markedly improve neonatal outcomes, whereas delayed treatment or drug-resistant tuberculosis increases the risk of adverse perinatal events (1,4). Appropriate neonatal management, including careful monitoring and preventive therapy, plays an important role in reducing morbidity in infants exposed to maternal tuberculosis (2,7).
The following series presents seven infants born to mothers with tuberculosis—six with pulmonary tuberculosis and one with multidrug-resistant tuberculosis (MDR-TB)—illustrating diverse neonatal outcomes.

Case Series

This retrospective case series analyzed the clinical profile and outcomes of neonates born to mothers diagnosed with tuberculosis during pregnancy at a tertiary care center. Maternal and neonatal clinical data were collected from hospital records. Outcomes assessed included gestational age, birth weight, respiratory support requirement, NICU stay, and survival as mentioned in Table No .1

Case 1:
A 29-year-old second gravida (G2P1L1), presented at 33+1 weeks of gestation. She was on ATT for pulmonary TB for the past two months. She delivered via spontaneous vaginal delivery. The baby weighed 1.2 kg, cried immediately after birth, and was preterm and low birth weight. The neonate was admitted to the NICU, placed on oxygen by CPAP, and later weaned to room air. Isoniazid prophylaxis along with pyridoxine was initiated after a negative CBNAAT report of the baby. Feeding was initiated with expressed breast milk and transitioned to direct breastfeeding. The infant remained hemodynamically stable and was discharged in satisfactory condition.

Case 2:
A 23-year-old woman (G2P1L1) with a six-month history of pulmonary TB on ATT, delivered at 31+2 weeks of gestation. The preterm infant, weighing 1.39 kg, cried immediately after birth and was admitted for observation and supportive care. The baby was managed with CPAP oxygen for two days and gradually weaned to room air.Isoniazid prophylaxis alongwith pyridoxine was initiated after a negative CBNAAT report of the baby. Nutritional supplementation and expressed breast milk feeds were initiated. The infant showed steady weight gain and was discharged in stable condition.

Case 3:
A 25-year-old primigravida at 36+6 weeks of gestation, was known to have multidrug-resistant tuberculosis (MDR-TB) and was receiving Category IV ATT. She underwent lower segment cesarean section (LSCS) and delivered a male infant weighing 2.55 kg. The baby cried at birth but developed mild respiratory distress, for which oxygen was administered via CPAP for three days before shifting to room air. CBNAAT report of the baby was negative. No antitubercular prophylaxis was administered to the neonate. Due to maternal MDR-TB, strict infection-control precautions were followed, including N95 mask usage and withholding expressed breast milk during the intensive phase of therapy. The neonate remained stable and was discharged in good health.

Case 4:
A 25-year-old woman, (G2A1), presented at 35+2 weeks of gestation with Rh-negative status, non-immune hydrops, and fetal anemia. She was sputum positive for pulmonary tuberculosis and had been started on ATT three days before delivery. She underwent emergency LSCS and delivered a male baby weighing 2.26 kg, who cried immediately after birth. The neonate was admitted to the NICU and provided oxygen support through CPAP, later shifted to mechanical ventilation . Isoniazid prophylaxis along with pyridoxine was initiated after a negative CBNAAT report of the baby. Despite intensive supportive measure, the neonate succumbed on day 2.

Case 5:
A 31-year-old multigravida (G4P2L2A1), presented at 32+1 weeks of gestation with pulmonary TB complicated by pleural effusion. She had been on ATT for only 2–3 days prior to delivery. An emergency LSCS was performed, delivering a preterm male infant weighing 2.25 kg. The baby cried immediately but developed respiratory distress with retractions and was admitted to the NICU. Initially managed with CPAP, the infant later required mechanical ventilation. Chest x-ray showed cardiomegaly pointing towards congenital heart disease. Isoniazid prophylaxis along with pyridoxine was initiated after a negative CBNAAT report of the baby. Despite intensive supportive measures, the neonate succumbed on day 3.

Case 6:
A 24-year-old woman (G2P1L1A0) presented at term with active pulmonary tuberculosis, diagnosed during pregnancy, and had completed antitubercular therapy prior to delivery. She underwent emergency LSCS and delivered a term male neonate weighing 3.22 kg, who cried immediately after birth with APGAR scores of 7, 8, and 9.The neonate was admitted to the NICU in view of positive sepsis

workup suggestive of meningitis, and lumbar puncture was performed. The infant received intravenous antibiotics for 14 days, showed clinical improvement, tolerated feeds well, and was discharged in stable condition. No antitubercular prophylaxis was administered to the neonate.CBNAAT report was negative

Case 7:
A 28-year-old woman (G3P2L2A0) presented at 37+1 weeks of gestation with active pulmonary tuberculosis and was started on antitubercular therapy three days prior to delivery. She underwent emergency LSCS and delivered a female neonate weighing 2.23 kg, who cried immediately after birth with APGAR scores of 8, 9, and 9.The neonate remained clinically stable, tolerated feeds well, and was managed with routine newborn care. Isoniazid prophylaxis along with pyridoxine was initiated after a negative CBNAAT report of the baby. The baby was discharged in stable condition.

Table No. 1

Case	GA (Weeks)	Birth Weight (kg)	Respiratory Support Requirement	Prophylaxis Given	Outcome
1	33+1	1.2	CPAP → Room air	Isoniazid + Pyridoxine	Discharged stable
2	31+2	1.39	CPAP × 2 days → Room air	Isoniazid + Pyridoxine	Discharged stable
3	36+6	2.55	CPAP × 3 days → Room air	No prophylaxis	Discharged stable
4	35+2	2.26	CPAP → Mechanical ventilation	Isoniazid + Pyridoxine	Expired on Day 2
5	32+1	2.25	CPAP → Mechanical ventilation	Isoniazid + Pyridoxine	Expired on Day 3
6	37+1	3.22	No respiratory support	No prophylaxis	Discharged stable
7	37+1	2.23	No respiratory support	Isoniazid + Pyridoxine	Discharged stable

DISCUSSION

This case series highlights the varied neonatal outcomes among infants born to mothers with tuberculosis. Four of the seven neonates were preterm and required respiratory support in the immediate postnatal period. Low birth weight and mild to moderate respiratory distress were consistent findings. Two mortality occurred in the infant whose mother had advanced pulmonary disease with pleural effusion and who had initiated ATT late in pregnancy.

- 5/7 were preterm
- 6/7 were low birth weight
- 5 required respiratory support
- 2 mortality (14%)
- 5 received INH prophylaxis

Maternal tuberculosis (TB) during pregnancy remains an important public health concern, particularly in developing countries where the disease burden is high. Infants born to mothers with active tuberculosis are at increased risk of adverse perinatal outcomes such as prematurity, low birth weight, intrauterine growth restriction, and perinatal mortality (1,2).

These adverse outcomes are influenced by the severity of maternal illness, poor maternal nutrition, delayed diagnosis, and inadequate or irregular antitubercular therapy during pregnancy. Early diagnosis and appropriate treatment during pregnancy significantly reduce the risk of poor neonatal outcomes (1).

Vertical transmission of Mycobacterium tuberculosis is uncommon but well documented. Congenital tuberculosis can occur via transplacental spread through the umbilical vein, aspiration or ingestion of infected amniotic fluid, or exposure to infected genital tract lesions during delivery (3). Neonates with congenital TB usually present with non-specific symptoms such as respiratory distress, fever, hepatosplenomegaly, lethargy, and poor feeding, which often leads to delay in diagnosis and increased mortality (3,6). Therefore, a high index of suspicion is required in infants born to mothers with active or recently treated tuberculosis.

Several studies have demonstrated that untreated maternal TB is associated with a two- to three-fold increase in the risk of preterm birth and low birth weight (4,5). However, when appropriate antitubercular therapy is given during pregnancy, maternal and neonatal outcomes improve considerably and may approach those of the general population (5).

Neonates exposed to maternal tuberculosis should receive isoniazid prophylaxis as per national and international guidelines, and Bacillus Calmette–Guérin (BCG) vaccination should be administered according to recommendations to prevent severe forms of childhood TB (2,7). Breastfeeding is generally considered safe if the mother is receiving treatment and is non-infectious, as the benefits of breastfeeding outweigh the risk of transmission (7).

Careful follow-up of infants born to mothers with tuberculosis is essential for early detection of infection, monitoring of growth, and ensuring adherence to prophylaxis. A multidisciplinary approach involving obstetricians, pediatricians, and tuberculosis control programs is recommended to optimize maternal and neonatal outcomes (1,2).

CONCLUSION

Infants of mothers with tuberculosis are at high risk for preterm birth, low birth weight, and respiratory complications. Early maternal diagnosis and adherence to antitubercular therapy, along with appropriate neonatal intensive care and infection-control practices, are crucial in improving survival and reducing morbidity. Coordination between obstetric, chest medicine, and neonatal care teams plays a vital role in achieving favorable outcomes for both mother and child.

REFERENCES

1. Mathad JS, Gupta A. Tuberculosis in pregnant and postpartum women: epidemiology, management, and research gaps. Clin Infect Dis. 2012;55(11):1532-49.
2. World Health Organization. Guidance for national tuberculosis programmes on the management of tuberculosis in children. 2nd ed. Geneva: WHO; 2014.
3. Cantwell MF, Shehab ZM, Costello AM, Sands L, Green WF, Ewing EP Jr, et al. Congenital tuberculosis. N Engl J Med. 1994;330(15):1051-4.
4. Jana N, Vasishta K, Saha SC, Ghosh K. Obstetrical outcomes among women with extrapulmonary tuberculosis. N Engl J Med. 1999;341(9):645-9.
5. Loto OM, Awowole I. Tuberculosis in pregnancy: a review. J Pregnancy. 2012;2012:379271.
6. Marais BJ, Schaaf HS. Tuberculosis in children. Cold Spring Harb Perspect Med. 2014;4(9):a017855.
7. American Academy of Pediatrics. Tuberculosis. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH, editors. Red Book: 2021 Report of the Committee on Infectious Diseases. 32nd ed. Itasca (IL): American Academy of Pediatrics; 2021. p. 829-853.