Tuberculosis in Pregnancy

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Overview of Session

• Background
• Maternal mortality and the Saving Mothers Report
• Mortality in eThekwini with case studies
Overview

- TB epidemic in women
- Epidemiology of TB in pregnant women
- Maternal, perinatal and neonatal outcomes
Background (1)

• Global TB report (2016):
  – Estimated 10.4 million incident cases (range: 8.7-12.2 million)
    • 34% women*, 10% children*
  – Gap between notifications and estimated incidence

* KEY populations and under estimated
Background (2)

• Concerns specific to women:
  – Exact incidence in pregnancy not known
  – Exact incidence of DRTB/ DSTB (pregnancy)
  – Impact on obstetric, perinatal and neonatal outcomes inconsistently documented

• Disaggregate data for children
EPIDEMIOLOGY IN PREGNANT WOMEN
**Figure 4: Epidemiology of active TB in pregnancy [2].**
IMPORTANT CONSIDERATIONS
TB-HIV co infection in pregnancy

- Unusual presentation
- Synergism:
  - CMI with HIV increased with TB
  - TB accelerates HIV progression
- TB and HIV independent risk factors for maternal deaths
Transmission from mother to child

- Transplacental through umbilical veins to fetal liver and lungs
- Aspirate or swallowing infected amniotic fluid in utero or intra partum
- Contact post delivery
MATERNAL, PERINATAL AND NEONATAL OUTCOMES
1. Antenatal TB

• 0.1% to 0.6% increase in TB case load (PTB*/ EPTB)
• Diagnosis based on microscopy/ culture, CXR and histology
• Last 3 mths of pregnancy
• 72% HIV infected
• TB prevalence 10 fold higher in co infected women
2. Maternal morbidity

- PTL
- Higher risk of obstetric complications (PROM, recurrent abortions)
- EPTB (pleural effusions, abdominal and TBM common) required hospitalisation for longer periods

Figueroa-Damian 1998, Jana NEJM 1999
Maternal and Neonatal TB

- Initial report in neonatal TB in SA:
  - 11 culture confirmed of 77 neonates over 1 year:
    - Gastric aspirates
    - 6 classified as congenital TB
    - Progressive pneumonia and fever
  - Maternal history (n=11):
    - 6 of 11 HIV co infected
    - 6 mothers had active TB/ history of TB
    - 3 peripartum TB
  - 1 neonatal (3mths) and 2 maternal deaths

Adhikari M IJTLD 1997
3. Maternal Mortality

- Zambia
- SA (2)
- Mozambique

4. Perinatal and neonatal outcomes

AE higher if maternal TB advanced, diagnosed late in pregnancy, non compliant

- Prematurity
- LBW
- SGA
- Perinatal death rate 6.4 fold and 3.1 fold higher in TB infected mothers
- LBW and low Apgars: maternal EPTB
5. Congenital TB (1)

- Rare or impression
- DSTB and DRTB
- Median age of presentation: 24 days (1-84)
- Management dilemmas:
  - BCG
  - Diagnostic challenge
  - Differential diagnoses
  - Prophylaxis
  - Breastfeeding
Panel 2. Clinical features in perinatal tuberculosis

<table>
<thead>
<tr>
<th>Feature</th>
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<tbody>
<tr>
<td>Prematurity</td>
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<tr>
<td>Low birthweight</td>
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<td>Persistent pneumonia</td>
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<td>Lymphadenopathy</td>
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<td>Hepatomegaly</td>
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<td>Splenomegaly</td>
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<tr>
<td>Jaundice</td>
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<td>Seizures</td>
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<td>Skin lesions</td>
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<td>Ear discharge</td>
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<td>Paravertebral abscess</td>
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<td>Chorioretinitis</td>
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<td>Haematological abnormalities: anaemia, thrombocytopaenia, disseminated intravascular coagulopathy</td>
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Non specific

*Pillay T Lancet Infectious Dis 2004*
POSTPARTUM TB
TB in post partum period

- India 2002-2005:
  - 715 co-infected women followed for 1 year post delivery
  - 24 developed TB (incidence 5 cases/100 yrs)
    - 3 maternal deaths, 2 infants developed TB and 4 infant deaths
  - Predictors of maternal TB:
    - Baseline CD4<200, VL > 50 000 copies/ml, (+) TST

Gupta A CID 2007
DRTB IN PREGNANCY, NEONATES AND CHILDREN
MDR in pregnancy/ post partum (1)

- **Limited**
- Case series or case reports
- Approximately 73 published (English)
- MTB and one *M Bovis*
- Largest cohort 38 (Peru) over 10 years
- Acceptable foetal outcomes in several small studies