TUBERCULOSIS (INVESTIGATION AND MANAGEMENT FOLLOWING EXPOSURE IN PREGNANCY)

- Usually the result of:
  - maternal history of TB in pregnancy
  - baby exposed to a close (usually household) contact with sputum positive TB
- Key to involve correct teams:
  - investigation and follow-up requires planning before birth of baby – obstetric team to complete neonatal alert; neonatal team to discuss with obstetric team regarding placental sampling (microbiology, histology)
    - TB team to alert neonatal team if a woman receiving TB treatment is pregnant, so that this can be planned
  - neonatal team to feedback to TB team/paediatric infectious disease team on discharge and in planning for follow-up

Baby not at risk of acquiring TB, or past history of maternal TB

BCG

Follow-up as required for general condition

Baby at risk of acquiring TB (see **Important points to consider)**

Investigate baby

- Inform relevant teams
- Three consecutive early morning pre-feed gastric washings, collected in alkali medium (arrange with microbiologist) for TB testing (request microscopy for acid fast bacilli, urgent PCR for M tuberculosis and mycobacterial culture)
- Chest X-ray
- +/- CSF

Additional investigation

- +/- maternal endometrial or placental sample for TB testing (AFB, PCR, culture)

- If baby has clinical signs, evidence of TB on chest X-ray or positive microbiology, seek advice from TB team/microbiology and/or paediatric infectious disease specialist teams and treat for TB
- If baby well with normal investigations
  - start isoniazid (add pyridoxine if breastfed)
  - check liver function test
  - arrange medication while inpatient (GP does not prescribe)
- Inform TB team in either situation (will support outpatient care for mother and baby in conjunction with paediatric/neonatal specialist team)

Management by TB/ID specialist or consultant with special interest in infectious disease

- Carry out a Mantoux test +/- interferon gamma release assay (IGRA) after 6 weeks of treatment
- If IGRA or Mantoux test positive (≥5 mm) reassess for active TB by clinical examination and chest X-ray
  - If there are symptoms, signs, or abnormal chest X-ray, obtain respiratory samples (gastric aspirates) +/- CSF for microbiology as above. Treat for TB in conjunction with TB/paediatric specialists
  - if this assessment is negative, continue isoniazid (with pyridoxine) for a total of 6 months **or** isoniazid (with pyridoxine) and rifampicin for 3 months
- If Mantoux negative and IGRA not done, request IGRA
- If Mantoux negative and
  - IGRA indeterminate – refer child to TB specialist
  - IGRA negative (and baby asymptomatic) – stop isoniazid (and pyridoxine) and give BCG vaccination 72 hr later
  - IGRA positive – reassess for active TB. Treat if active TB. If assessment for active TB negative, continue isoniazid (with pyridoxine) for a total of 6 months **or** isoniazid (with pyridoxine) and rifampicin for 3 months

Note: It is important to inform TB team, consultant (infectious diseases physician or paediatrician/neonatologist with infectious disease interest), and microbiology team of all cases for information, confirmation of action plan and decision on follow-up. All cases of multi-drug resistant and extreme drug resistant TB should be managed in conjunction relevant support from Public Health England and the above

Important points to consider

- Baby at risk of acquiring TB includes:
- mother received treatment for <2 weeks **or** mother on therapy for >2 weeks but sputum smear positive
- mother diagnosed with TB in postpartum period and/or after commencement of breastfeeding
- close household contact with sputum positive pulmonary TB

- For all cases of maternal TB in pregnancy, decision whether baby requires INH prophylaxis should be made in conjunction with relevant local team with expertise (e.g. TB team, microbiology team, or local or regional consultant infectious disease specialist); appropriate team will advise in cases where significant exposure/symptomatology, to commence anti-TB prophylaxis/treatment immediately, before completion of gastric washing samples
- If starting baby on isoniazid prophylaxis **do not** administer BCG at discharge from NNU – isoniazid will have an effect on BCG vaccine
- If baby given BCG at birth, interpretation of skin tests at 6 weeks difficult and IGRA becomes essential to distinguish BCG response (will give TST positive response and IGRA negative response), or latent TB (IGRA positive)
- If treated with isoniazid and breastfed give pyridoxine 1 mg/kg/day supplementation
- Mothers with active-phase TB can breastfeed once smear negative after appropriate treatment
- If baby treated with isoniazid, check liver function test 2 weeks later

- Baby may acquire mycobacteria from an incompletely treated mother either in-utero, intrapartum or postpartum
- Congenital TB transmitted across the placenta or at birth is rare, but potentially devastating with high mortality
- transmitted when mother has (usually undiagnosed) untreated or inadequately treated disseminated TB with endometrial or urogenital involvement
- characterised by primary focus in the liver, hepatosplenomegaly and a miliary or disseminated picture, including respiratory dissemination and TB meningitis
- Neonatal infection by respiratory route from sputum smear-positive or negative mother, or other contact with respiratory TB – much more common, and the newborn is highly susceptible to severe respiratory and disseminated disease, including TB meningitis and miliary TB
- Baby may also present with symptomatic TB if infected by mother or other contact whose TB has not been diagnosed
- consider and suspect TB even in absence of proven maternal TB, especially in endemic regions
- signs and symptoms may be subtle and atypical in newborn/young infant

- Gastric washing samples taken pre-feed (usually early morning) are useful, as any potential mycobacteria caught by baby's innate mucociliary escalator will be washed into trachea, bronchi and upwards, swallowed and present in the relatively less acidic neonatal stomach. Using an alkali solution as the transport medium for the gastric aspirate keeps the mycobacteria alive until tested in the laboratory
- IGRA and Mantoux skin tests define infection but cannot distinguish between infection and disease
- If IGRA (also known as IGT, TB Elispot or T Spot) not available, Mantoux skin test is sufficient provided baby has not had BCG. IGRA takes 72 hr to be completed and cannot be carried out at weekend. Arrange with microbiology/immunology laboratory

PARENT INFORMATION LEAFLET FOR TB IN PREGNANCY AND FOR PROPHYLAXIS IN BABY

- https://www.nhs.uk/Conditions/Tuberculosis/Documents/Pregnancy%20TB-Patient.pdf
- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/487319/Pregnancy_TB-Clinicians.pdf