

MANAGEMENT OF INFANTS BORN TO HIV POSITIVE MOTHERS

Introduction

- Perinatal management of infants born to HIV-infected mothers requires a coordinated multidisciplinary team approach.
- Consultants responsible for antenatal medical and counselling care:
 - HIV-Medicine yvonne.gilleece@bsuh.nhs.uk
 - Obstetrics david.utting@bsuh.nhs.uk
 - Neonatology rob.bomont@bsuh.nhs.uk

Antenatal Neonatal Appointment

- All mothers will be offered an antenatal appointment to discuss the care of their baby postnatally.
- This discussion should focus on the following areas of care.
 - Immediate Newborn Period
 - Diagnosis and Testing
 - Antiretroviral medication
 - Immunisations
 - Infant Feeding
 - Subsequent Outpatient Management

Immediate Newborn Period

- Please refer to the Birth Plan which is available in both the Maternal Notes and in the pre-prepared Baby Notes. This is formulated towards the end of the third trimester detailing a management plan for both the mother and the infant and is prepared by the HIV Team. In case of preterm delivery please contact the HIV team immediately.
- Occasionally mothers may refuse HIV testing during pregnancy. It may be necessary to seek consent for postnatal testing of the infant. For further information on how to proceed please refer to the Guideline HIV Testing of Babies of Untested Mothers.
- If there are any difficulties with non-emergency management or planning of treatment for these babies, please discuss with Dr Rob Bomont in the first instance and/or the HIV Medicine Team.

Diagnosis of HIV Infection in non-breast fed infants

- Maternal antibodies pass through the placenta to the fetus and persist for up to 18 months. Colindale our regional reference laboratory measures both HIV DNA and RNA using PCR. The tests involve a number of stages which can and do fail for technical reasons. It is good practice to warn parents that occasionally further samples are requested purely because of technical difficulties with the test itself. Results will take up to two weeks to come back.
- Newborn infants should have a test on day 1 (at least 0.5 ml EDTA) and not cord blood (this can be contaminated with maternal blood) Please note maternal details in the clinical information box on the baby request form. Blood test forms (Path. and Virology) should be labelled NOPD in the consultant/code section.
- Maternal sample should be sent with this (4 ml whole blood EDTA, purple top, unspun). This ensures that the correct primers are used by

the reference laboratory. The HIV team are responsible for ensuring maternal blood has been sent

- Blood should also be taken from the infant for full blood count, urea & electrolytes, liver function tests to check for in utero antiretroviral toxicity. The most common abnormality is anaemia.

Antiretroviral Medication (see Treatment Algorithm below)

- Medication choice and duration is dependent upon a stratified risk system, please refer to the Birth Plan to review the medication regimen determined by the HIV Team. If you are in any doubt or you feel that the clinical situation has changed then please discuss with the HIV registrar on-call.

Very Low Risk

- **Two weeks zidovudine monotherapy** is recommended if all the following criteria are met:
 - Mother has been on cART (combination antiretroviral therapy) for longer than 10 weeks**AND**
 - Two documented maternal HIV viral loads < 50 HIV RNA copies/mL during pregnancy at least 4 weeks apart**AND**
 - Maternal HIV viral load < 50 HIV RNA copies/mL at ≥ 36 weeks

Low Risk

- **Extend to 4 weeks zidovudine monotherapy if:**
 - The criteria for very low risk are not all fulfilled but maternal HIV viral load is < 50 HIV RNA copies/mL at or after 36 weeks.**OR**
 - Baby is born prematurely (< 34 weeks) but most recent maternal HIV viral load is < 50 HIV RNA copies/mL.

High Risk

- Use **combination PEP** for 4 weeks if maternal birth HIV viral load known to be or likely to be > 50 HIV RNA copies/mL. The HIV team will advise as to which combination is most appropriate.

Premature/Sick Neonates Unable to Feed Orally:

- Only intravenous ART available is AZT. The dose is gestation dependent.

Supportive Medication and Immunisations

Pneumocystis Pneumonia Prophylaxis (PCP)

- Co-trimazole is recommended from 1 month of age if HIV PCR is positive at any stage.

Immunisations

- Immunisations should be given as per the national schedule.
- Certain immunisations require special considerations:
 - Rotavirus immunisation is not contraindicated unless the HIV diagnosis has been confirmed and the infant is severely immunocompromised.
 - Hepatitis B Routine immunisation within 24 hours of delivery is no longer advised as HIV is no longer considered an additional risk factor

- If the mother is co-infected with Hepatitis B, Hepatitis B vaccination should be given within 12 hours of delivery. HBIG should be given if indicated (see HBV Guideline).
- BCG vaccination should be given if there is VERY LOW or LOW risk of HIV transmission and BCG at birth is indicated. This should not be delayed and should be given according to the national guidelines for HIV unexposed infants. If there is HIGH risk of HIV transmission, then BCG vaccination should be delayed until 3 negative HIV PCR's are obtained – this typically will be around 3 or 4 months of age.

Infant Feeding

- In the UK and other resource rich settings the safest way to feed infants born to mothers with HIV is with formula milk, as this eliminates ongoing risk of HIV exposure after birth. A small proportion of women who are virologically suppressed are now choosing to breast feed and our team should support this. The Sunflower Clinic at the Claude Nicole Centre has produced a Parent Information Leaflet which can be found on:
<https://www.bsuh.nhs.uk/wp-content/uploads/sites/5/2016/09/HIV-and-breastfeeding-your-baby.pdf>
Appendix 5 of the BHIVA Guideline is a very helpful document if you are involved in counselling or need more practical information.

Subsequent Outpatient Management

- The timing of outpatient reviews and molecular diagnostic testing for HIV infection is dependent upon the infant's stratified risk category and feeding method:

Exclusively non-breast fed infants

- All infants should have DNA/RNA PCR samples taken within first 24 h
- If HIGH RISK review at 2 weeks of age with DNA/RNA PCR at that appointment
- At 6 weeks (at least 2 weeks post cessation of infant prophylaxis) with DNA/RNA PCR, FBC, U&E's and LFT's
- At 12 weeks (at least 8 weeks post cessation of infant prophylaxis) with DNA/RNA PCR, FBC, U&E's and LFT's
- On other occasions if additional risk identified
- HIV antibody testing for seroconversion should be checked at age 18-24 months with DNA/RNA PCR

Breastfed infants

- All infants should have DNA/RNA PCR samples taken within first 24 h
- At 2 weeks of age with DNA/RNA PCR at that appointment
- Monthly whilst breast feeding with DNA/RNA PCR at each visit and, FBC, U&E's and LFT's until 12 weeks unless abnormalities detected
- At 4 and 8 weeks after cessation of breastfeeding with DNA/RNA PCR
- HIV antibody testing for sero-conversion should be checked at age 18-24 months with DNA/RNA PCR

HIV Treatment Algorithm

