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Document Control

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Management of HIV infection in Pregnancy			
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CONTENTS

1. Introduction

1.1. Human Immunodeficiency Virus (HIV) is a blood borne virus. It is a retrovirus that infects and damages T-Lymphocytes, resulting in immune suppression that eventually leads to Acquired Immune Deficiency Syndrome (AIDS). Two forms of the virus have been identified, HIV-1 and HIV-2. The commonest and most virulent form is HIV-1 with HIV-2 being relatively uncommon in western countries.

1.2. HIV is transmitted through:

- Sexual contact
- Contaminated blood e.g. needle sharing

- Transmission from mother and child, which can occur in utero, during labour and birth or through breast feeding

1.3. Pregnant women are offered screening for HIV infection so that interventions can be offered to reduce the risk of mother-to-baby transmission of the virus, as well as to safeguard the woman's own health. Antiretroviral therapy, appropriate management at birth and the avoidance of breast feeding can reduce the risk of mother-child transmission from approximately 33% to less than 0.1%.

2. Purpose

2.1. The purpose of this document sets out Northern Devon Healthcare Trust's best practice guidelines for the management of HIV Viral infection in Pregnancy.

2.2. The policy applies to all Maternity Staff

2.3. Implementation of this policy will ensure that:

- Women who are known to be HIV positive or who are found to HIV positive through Antenatal Screening, have rapid referral for assessment and management within a multi-disciplinary team.
- Women, who are HIV positive, are in optimal health.
- The chances of, mother to child HIV transmission is reduced.

3. Abbreviations

CMM Consultant Medical Microbiologist

ANNB Antenatal & newborn

BHIVA British HIV association

CHRD Child health records department

GUM Genitourinary Medicine.

IDPS Infectious diseases in pregnancy

MTCT Mother to child transmission

cART combined Anti-Retroviral Treatment

ROM Rupture of Membrane

PPROM Prolonged Preterm Rupture of Membrane

PLCS Planned Caesarean Section

HBV Hepatitis B Virus

HCV Hepatitis C Virus

PEP Infant Post exposure Prophylaxis

POCT Point of Care Test

4. General Principles in the "Management of HIV infection in Pregnancy"

Screening Policy

4.1. Offering screening

- All pregnant women are provided with a copy of "screening tests for you and your baby" leaflet in a format they can understand and then offered screening tests for infectious diseases which include rubella, hepatitis B, syphilis and HIV by community midwives at booking. Screening should be recommended alongside the other antenatal booking blood tests. The offer and verbal consent is recorded in their hand held notes. Women do have the right to decline screening but this should be clearly documented in their hand held and hospital notes and antenatal screening coordinator should be informed.

- Should any infectious disease screening test be declined, testing should be re-offered at 28 weeks by the community midwife and the woman made aware that she can request screening at any stage during her pregnancy and in labour. Where this has not happened, screening is offered prior to discharge from maternity services.

- If the woman booked late at or after 24 weeks gestation, urgent screening test should be performed. Women who transfer care to NDDH should have hard copies of screening tests results seen by midwife; otherwise, screening tests should be reoffered.

- Be aware that a negative result at booking does not exclude the possibility of a newly acquired infection during pregnancy. If considered a risk then a test can be reoffered at any time. Women, who test negative at booking, but partner known to be HIV positive, should be referred to the antenatal screening coordinator for advice and an assessment of on-going risk of HIV infection. HIV testing will be repeated at regular intervals throughout pregnancy and postnatal period.

- Women presenting in labour/ROM/requiring delivery without a documented HIV result must be recommended to have an urgent HIV test. A reactive/positive result must be acted upon immediately with initiation of the interventions to prevent MTCT without waiting for further/ formal serological confirmation.

Rationale

4.2. The aim of antenatal screening is.

4.3. 1. Ensure that all HIV positive women are identified at early pregnancy

4.4. 2. Ensure a rapid referral of all HIV positive women for assessment and management within a multi-disciplinary team.

4.5. 3. To contribute to the reduction of neonatal and paediatric HIV infection

New Diagnosis of HIV from antenatal Screening.

- The duty CMM will telephone a positive screen result to the ANNB screening coordinator or Antenatal Clinic Midwife on extension 2600. An email will also be sent to: ndht.antenatalscreening@nhs.net with details of the individual.

- The ANNB screening Coordinator will make contact with the woman within 5 working days of maternity services receiving the result from the laboratory. Screening coordinator will also inform the consultant obstetrician about the result who will then see the patient as soon as possible with the maximum of within 10 working days from the receipt of the result.

- The consultant obstetrician will counsel the patient on the following points

4.6. Result of the blood test

4.7. Implications of HIV infection for her own health, the pregnancy, her partner and other family member.

4.8. The need to attend specialist appointment for further tests to evaluate maternal treatment needs.

4.9. The potential benefits of multi-disciplinary management for the pregnancy, the woman health and that of the baby

- The patient will also be provided further information such as

4.10. http://www.arc-uk.org/

4.11. www.positivelyuk.org

4.12. Information for you: HIV and pregnancy (RCOG 2013)

- Consultant obstetrician (screening coordinator in the absence of consultant obstetrician) to contact urgently GUM unit by telephone followed by letter.

- Tel 01271 341562 and ask to speak to a Nurse Advisor or Health Advisor to inform consultant GUM of a potential new HIV +ve pregnant woman and to book an appointment for her to be seen. The Fax number to forward the details is: 01271 341524

- At GUM clinic, confirmatory blood test for HIV will be performed. In addition, base line blood tests such as CD4 count, HIV subtyping, HIV viral load, HIV resistance tests, HLA-B*5701 together with other appropriate tests. Sexual health screening tests will also be performed and treated accordingly. With the woman's consent, the partner will be informed and tested if necessary. Consent should also be obtained for GU identifier to be provided to the obstetric and CMM teams in order to identify results.

- HIV positive result to be documented in hand held notes, only with consent.

- Individualised management plan is to be documented clearly in the woman's handheld and hospital maternity notes by all members of the multi-disciplinary team.

- The ANNB screening Coordinator will notify the National Study of HIV in Pregnancy and Childhood www.nshpc.ucl.ac.uk of positive HIV result.

- Non-attendance at the specialist appointment will be reviewed by the multidisciplinary team and a management and action plan agreed.

HIV positive result known prior to pregnancy

- Community Midwife to indicate on the IDPS laboratory request form that the woman is known to be HIV positive.

- Community Midwife to make Obstetric referral at booking appointment.

- Community Midwife to inform the ANNB Screening Coordinator at booking. ANNB Screening Coordinator to ensure that the woman has an appointment with the Consultant Obstetrician within 10 working days of booking appointment with the Community Midwife.

- ANNB Screening Coordinator is to ensure the woman is given appropriate information in a format that can be understood within 5days of 1st booking appointment with the community midwife.

Antenatal Management

4.13. Women identified as being HIV positive in pregnancy should be managed by a multidisciplinary team, including a genito-urinary medicine consultant, Consultant Obstetrician with special interest in maternal medicine, Consultant Medical Microbiologist, antenatal Specialist midwife and Consultant Paediatrician.

4.14. Management of women with positive results from antenatal screening for HIV

- The woman should be reassured that confidentiality will be maintained.
- The combined screening test for trisomy 21 is recommended as this has the best sensitivity and specificity and will minimize the number of women who may need invasive testing.
- Fetal ultrasound imaging should be performed as per national guidelines regardless of maternal HIV status.
- Advice should be given about safer-sex practices and the use of condoms to prevent transmission of HIV to an uninfected partner
- All HIV positive individuals should have Hepatitis B and pneumococcal vaccination and these vaccines can be safely administered in pregnancy
- In all HAV non-immune, HBV or HCV co-infected women, HAV vaccine is recommended, after the first trimester, as per the normal schedule (0 and 6–12 months)
- HIV and hepatitis virus co-infections. Pregnant women co-infected with hepatitis B or C will be referred to tertiary unit via GUM physician for further management.
- Where invasive prenatal diagnosis (Amniocentesis or Chorionic villous sampling) is contemplated, the advice of the fetal Medicine specialist and HIV Consultant should be sought and prophylaxis with HAART considered.
- Prophylaxis against Pneumocystis carinii pneumonia may be required, depending on CD4 lymphocyte count.

- If interventions to reduce MTCT of HIV are refused by the mother despite supportive guidance from the multi-disciplinary team, a pre-birth planning meeting should be held with social services to discuss safeguarding issues.

- A plan of care for anti-retroviral therapy, mode of delivery and postnatal care should be finalised by 36 weeks of pregnancy with involvement of GUM consultant, obstetrician and paediatrician, and documented clearly in the woman's notes.

Antiretroviral treatment in pregnancy

- The optimal regimen will be decided on a case by case basis by the GUM consultant in conjunction with Peninsula HIV network colleagues. Basic principles depend on viral load, CD4 cell count, mother's health, previous treatment, gestation, mode of delivery, resistance to antiretroviral drugs.

- Untreated women with a CD4 cell count ≥ 350 cells/uL and a viral load of < 50 HIV RNA copies/mL(confirmed on a separate assay): can be treated with zidovudine monotherapy or with cART (including acavir/lamivudine/zidovudine)

- Failure to suppress: In the event that a woman who has initiated cART during pregnancy has not achieved a plasma viral load of < 50 copies/mL at 36 weeks, consider to review adherence and concomitant medication, perform HIV resistance testing or consider intensification.

- Women presenting in labour/ROM/requiring delivery without a documented HIV result must be recommended to have an urgent HIV test (point of care test) after discussing with on-call microbiologist. A reactive/positive result must be acted upon immediately with cART as soon as possible to reduce the risk of MTCT without waiting for further/formal serological confirmation which will be required later.

- An untreated woman presenting in labour and found to have a +ve HIV test on POCT (or any untreated HIV+ve woman presenting in labour) should be given a stat dose of nevirapine 200mg and be commenced on zidovudine/lamivudine plus raltegravir. It is recommended that IV zidovudine be infused for the duration of the labour and delivery

Laboratory monitoring of HIV-positive pregnant women

4.15. The following blood tests including an HIV confirmatory test will be carried out at GUM clinic after consultation with the patient as directed by GUM physician.

- <u>CD4 count</u>

- HIV subtyping
- HIV viral load
- HIV resistance tests
- HLA-B*5701
- Renal function
- LFT
- Bone profile
- FBC
- U/A
- Urine protein:creatinine ratio
- Lipid profile
- HbA1c
- STS
- HepAIgG
- HepBcAb
- HepCAb
- Toxoplasma serology
- Measles IgG
- Varicella IgG
- Sexual Health Screen

- Viral load should be performed 2–4 weeks after commencing cART, at least once every trimester, at 36 weeks and at delivery.

- CD4 T-lymphocyte measurement is usually done at least every 3 months and at 36 weeks in women on established therapy, 2 weeks after any change in therapy, and at delivery. In women commencing cART in pregnancy liver function tests should be performed as per routine initiation of cART and then at each antenatal visit. Hepatotoxicity may occur as a result of the initiation of cART and/or the development of obstetric complications such as obstetric cholestasis, pre-eclampsia, HELLP syndrome and acute fatty liver. Women taking ritonavir-boosted protease inhibitors (e.g.: lopinavir or atazanavir) should be screened for gestational diabetes.

Delivery

4.16. Mode of delivery

- For women taking cART, a decision regarding recommended mode of delivery should be made after review of plasma viral load results at 36 weeks.

- Should the woman require delivery before 36 weeks, contact should be made to the named consultant or GUM physician (during working hours) and to the microbiology staff on-call (during out of hours) in order to obtain the most recent blood tests results so that appropriate management can be provided.

- For women with a plasma viral load of < 50 HIV RNA copies/mL at 36 weeks, and in the absence of obstetric contraindications, a planned vaginal delivery is recommended.

- Vaginal birth after Caesarean section (VBAC) should be offered to women with a viral load < 50 HIV RNA copies/mL

- For women with a plasma viral load of 50–399 HIV RNA copies/mL at 36 weeks, PLCS should be considered, taking into account the actual viral load, the trajectory of the viral load, length of time on treatment, adherence issues, obstetric factors and the woman's views.

- Where the viral load is ≥ 400 HIV RNA copies/mL at 36 weeks, PLCS is recommended regardless of ART

- If Elective Caesarean delivery is considered, it should be performed with intact membranes, or as soon as possible after rupture of membranes, as it reduces the incidence of HIV in infants at 18 months compared with vaginal delivery.

- During caesarean section, the surgical field should be kept, as haemostatic as possible and care should be taken to avoid rupturing the membranes until the head is delivered through the surgical incision. Early cord clamping is recommended. Care should be taken to prevent contamination of the cut cord by maternal blood or secretions.

Time of delivery

- The timing of PLCS is a balance between the risks of transient tachypnoea of the newborn (TTN) and the likelihood of labour commencing before the scheduled Caesarean section

- Where PLCS is undertaken only for obstetric indications and plasma viral load is < 50 copies/mL, it is recommended between 39 and 40 weeks.

- Where the indication for PLCS is prevention of MTCT, PLCS should be considered at 38 weeks gestation after administration of prophylactic steroid.

Management of spontaneous rupture of membrane

- Term pre-labour spontaneous rupture of the membranes: delivery should be expedited by immediate induction of labour with a low threshold for treatment of intrapartum pyrexia or immediate caesarean section depending on the viral load.

- Prolonged premature rupture of membranes at ≥ 34 weeks: the same as term except women who are 34–37 weeks' gestation will require group B streptococcus prophylaxis

- PPROM occurs at < 34 weeks: There should be multidisciplinary discussion about the timing of delivery. Intramuscular steroids should be administered virological control should be optimized

Management during labour

- Intrapartum intravenous zidovudine infusion: For women with a viral load of > 1000 HIV RNA copies/mL plasma or women with unknown current viral load or untreated women who present in labour, or with ruptured membranes.

- Intrapartum intravenous zidovudine infusion should also be considered in those women with a viral load of > 1000 HIV RNA copies/mL plasma who are admitted for PLCS or in women on zidovudine monotherapy undergoing a PLCS.

- In women for whom a vaginal delivery has been recommended and labour has commenced, obstetric management should follow the same principles as for the uninfected population. i.e. if the viral load is undetectable, amniotomy, fetal scalp electrodes and blood sampling, instrumental delivery and episiotomy may be considered if the benefits outweigh the risks.

- The cord should be clamped as soon as possible after delivery.

- Care should be taken to prevent contamination of the cut cord by maternal blood or secretions.

Preventing occupational exposure

- Staff should adhere to the Trust Standard Infection control Precautions policy.

- Gloves, eye protection, and a water-impermeable gown over a plastic apron should be worn at delivery.

Communication with health care workers

- With sensitivity to concerns about confidentiality, families should be strongly encouraged to inform primary health carers, including midwives, health visitors and family doctors about maternal HIV and indeterminate infants. This will enable the local team to give appropriate support and advice, especially regarding infant feeding and where the infant or mother is unwell.

Neonatal Management

4.17. Infant post-exposure prophylaxis

- Neonatal interventions including antiretroviral therapy should have been decided and prescribed by the named paediatrician in conjunction with neonatal network before the baby is born

- Neonatal PEP should be commenced very soon after birth, certainly within 4 hours and should be given for 4 weeks.

Infant feeding and immunization

- All mothers known to be HIV positive, regardless of antiretroviral therapy, and infant PEP, should be advised to exclusively formula feed from birth.

- Infants born to HIV-positive mothers should follow the routine national primary immunization schedule.

- Where the mother is co-infected with hepatitis B virus neonatal immunization with or without HBIG should commence within 24 hours of delivery.

Infant Testing

- Molecular diagnostics for HIV infection should be performed during the first 48 hours and prior to hospital discharge for exclusively non-breastfed infants.

- HIV DNA PCR is tested initially which will detect virus. Antibody testing is not done until 18/12 of age because of the false positive results from maternal antibody.

- For HIV DNA PCR the minimum amount is 0.5mls and the specimen is put in an EDTA (purple topped) tube. This needs to be sent on a Microbiology form using the patient identifiers and this will be sent off by the Microbiology lab to PHE Colindale.

Child protection

- Rarely, pregnant mothers refuse treatment for their own HIV as well as interventions to reduce MTCT for social, religious or other reasons; they can be helped by step-by step approach with input of the multidisciplinary team. Where, despite all efforts, the multidisciplinary team is unable to influence a mother's views antenatally, a pre-birth planning meeting with social services should be held. The mother should be informed that it is the paediatrician's role to advocate on behalf of the child's wellbeing and therefore to prevent, where possible, HIV infection. If the mother continues to refuse any intervention then legal permission should be sought at birth to treat the infant for 4 weeks and prevent breastfeeding

5. Education and Training

5.1. Responsibility for education and training lies with antenatal screening co-ordinator and Labour Ward Lead Midwife.

6. Consultation, Approval and Review processes

6.1. The author consulted with all relevant stakeholders. Please refer to the Document Control Report.

6.2. Final approval was given by the maternity guidelines group.

6.3. The guideline will be reviewed every three years. The author will be responsible for ensuring the guidelines are reviewed and revisions approved in accordance with the Document Control Report.

7. Monitoring Compliance and Effectiveness

7.1. Monitoring is undertaken by an audit, supported by clinical effectiveness and audit department on the common themes that are triggered by the clinical incident reporting system, or in response to a change in practice.

7.2. Completion of the audit will be the responsibility of the Maternity Services Risk Co-ordinator.

7.3. The Maternity Services Patient Safety Forum will review the results of the audit and create an appropriate action plan to ensure improvements are made.

8. References

8.1. British HIV Association: Guidelines for the management of HIV infection in pregnant women 2012. (2014 Interim review).

8.2. UK National Screening Committee: Infectious disease in pregnancy screening Programme standards. (September, 2010)

9. Associated Documentation

9.1. Antenatal & Newborn Screening

9.2. Standard Infection Control Precautions Policy

9.3. Hepatitis B in pregnancy guideline

9.4. Hepatitis C in pregnancy guideline