BHIVA Pregnancy Guidelines 2012

UK prevalence in pregnancy and risk of transmission

- In 2009 HIV prevalence in the UK among women giving birth was 2.2 per 1000
- The majority of these women are from sub-Saharan Africa with a prevalence of 2–2.5% in London and 3–3.5% outside London
- Although low, the prevalence of HIV among UK-born women giving birth has increased 3-fold since 2000 from 0.16 per 1000 to 0.46 per 1000
- Mother-to-child transmission of HIV-1 is a rare occurrence in the UK, particularly when a woman receives HAART where the MTCT rate is 0.1%

UK prevalence in pregnancy and risk of transmission

- In 2010 over 98% of all diagnosed women received some form of ART pre delivery
- From 2006 to 2010, delivery by elective CS has halved from 66% to 33% of deliveries and vaginal deliveries have increased from 15% to 40%
- Reported emergency CS rates have increased from 20% to 25% and may be partly explained by the rise in vaginal deliveries

Antenatal HIV screening and reporting

- Antenatal screening for HIV was implemented in the UK in 2000
- National uptake of testing was reported as 95% in 2008, with all regions reporting at least 90% uptake
- Antenatal screening for HIV should be offered at the booking visit

Antenatal HIV screening and reporting

- It should be reoffered to women who decline initial testing at about 28 weeks' gestation and to any woman thought to have an ongoing risk for HIV
- An audit of 90 perinatal transmissions found that HIV was undiagnosed in over two-thirds of the women delivering
- All pregnant HIV-positive women should be reported prospectively by their HIV physicians to the NSHPC (www.nshpc.ucl.ac.uk) and to the Antiretroviral Pregnancy Registry (www.apregistry.com)

Screening and monitoring of HIV-positive pregnant women

- HIV-1 RNA levels in cervicovaginal secretions correlate with MTCT
- In the majority of women cervicovaginal levels of HIV-1 will mirror plasma levels, but in some women compartmentalisation of HIV-1 in the genital tract may occur; the clinical significance of this is unknown

Screening and monitoring of HIV-positive pregnant women

- Screening for STIs and syphilis is important to minimise MTCT and should be done as early as possible in pregnancy and should be repeated at 28 weeks' gestation
- Chorioamnionitis may cause PROM and premature birth. The commonest pathogens are those associated with BV, including *Ureaplasma urealyticum*

Screening and monitoring of HIV-positive pregnant women

- Treatment of BV before 20 weeks' gestation may reduce the risk of PTD
- Any infection diagnosed should be treated as per BASHH guidelines, followed by a test of cure
- Partner notification should take place to avoid re-infection
- Routine cytology should be deferred but follow-up of abnormal cytology and/or colposcopy should proceed

Antiretroviral treatment

- Tenofovir plus emtricitabine, abacavir plus lamivudine or zidovudine plus lamivudine are acceptable nucleoside backbones
- The third agent in HAART should be efavirenz or nevirapine (if the CD4 count is <250 cells/μL) or a boosted PI

Antiretroviral treatment

- Darunavir (which should be dosed twice daily) is the only adult-dose ARV that should have a dose alteration during pregnancy
- Consider third trimester TDM, particularly if combining tenofovir and atazanavir or if using a non-standard dose of ARV or darunavir

Antiretroviral treatment

- Zidovudine monotherapy can be used in women planning a caesarean section (CS) who have a baseline VL <10 000 HIV RNA copies/mL and CD4 count of >350 cells/μL
- Women who do not require treatment for themselves should commence temporary HAART at the beginning of the second trimester if the baseline VL is >30 000 HIV RNA copies/mL. (Consider starting earlier if VL >100 000 HIV RNA copies/mL.)

Antiretroviral treatment

- All women not on treatment should have commenced ART by week 24 of pregnancy
- The combination of zidovudine, lamivudine and abacavir can be used if the baseline VL is <100 000 HIV RNA copies/mL plasma

Late-presenting woman not on treatment

- A woman who presents after 28 weeks should commence HAART immediately based on the epidemiological incidence of resistance
- If her viral load is >100 000 copies/mL or unknown, she should commence a 3- or 4-drug regimen to include raltegravir
- A normal vaginal delivery is possible if a VL <50 copies/mL is achieved by 36 weeks

Late-presenting woman not on treatment

- If a woman presents at 24–28 weeks, initiation of HAART may be deferred until results are available if the benefits of individualised treatment outweigh risks (such as high VL)

Late-presenting woman not on treatment

- An untreated woman presenting in labour at term should be given a stat dose of nevirapine 200 mg and commence fixed-dose zidovudine with lamivudine and raltegravir and have a continuous IV infusion of intravenous zidovudine for the duration of labour and delivery

Late-presenting woman not on treatment

- If delivery occurs within 2 hours of maternal nevirapine dose the infant should be given nevirapine immediately
- In preterm labour, if it is unlikely that the infant will be able to feed enterally the mother should be given nevirapine, raltegravir and double-dose tenofovir to further load the baby

Late-presenting woman not on treatment

- Women presenting in labour, with ruptured membranes and/or requiring delivery without a documented HIV test, must:
  - Have an urgent point-of-care test or if unavailable an urgent lab-based HIV serology test
  - If positive PMTCT intervention should be commenced immediately
  - A confirmatory urgent HIV Ab test and baseline CD4 count, VL and resistance test samples should also be taken
  - The infant should receive triple therapy

Stopping ARVs postpartum

- The discontinuation of non-nucleoside reverse transcriptase inhibitor (NNRTI)-based HAART postpartum should be according to BHIVA adult guidelines
- ART should be continued in all pregnant women who commenced HAART with a history of an AIDS-defining illness or with CD4 count <350 cells/μL as per adult treatment guidelines

Stopping ARVs postpartum

- ART should be continued in all women who commenced HAART for MTCT with a CD4 count of between 350 and 500 cells/μL during pregnancy who are coinfected with hepatitis B virus (HBV) or hepatitis C virus (HCV) in accordance with adult treatment guidelines

Stopping ARVs postpartum

- ART can be continued in all women who commenced HAART for MTCT with a CD4 count of between 350 and 500 cells/μL during pregnancy
- ART should be discontinued in all women who commenced HAART for MTCT with a CD4 count of >500 cells/μL unless there is discordance with her partner or co-morbidity

HIV, HBV and pregnancy

- The effect of HBV and pregnancy on each other is minimal
- HIV effect on HBV disease is significant with higher HBsAg rates, higher HBeAg +ve rates, faster progression, higher rates of chronicity, higher HBV DNA levels, higher mortality (cirrhosis and hepatoma) and higher rates of 3TC resistance
- Where the mother has HBV DNA <10 IU/mL and is receiving cART, NVD can be recommended
- No data for increased MTCT over HBV alone

HIV, HBV and pregnancy

- Neonatal immunisation +/- HBIG should commence within 24 hours of delivery and is highly protective
- LFTs and HBV DNA should be monitored frequently in the immediate period after stopping drugs with anti-HBV activity

Management of HIV/HBV during and after pregnancy

- Tenofovir and FTC should be included in and/or added to new/current cART regimen
- FTC/3TC should not be used alone for HBV control because of increased HBV emergent resistance rate
- FTC has potential antiviral benefits over 3TC

Management of HIV/HBV during and after pregnancy

- Continue TDF-containing cART if:
  - CD4 count <500 cells/μL
  - CD4 count >500 cells/μL and when there is HBV viraemia >2000 IU/mL *or* liver fibrosis
- *Recommend* continuing TDF-containing cART if:
  - CD4 count >500 cells/μL and when there is HBV viraemia <2000 IU/mL and no evidence of liver fibrosis

HIV, HCV and pregnancy

- HIV worsens HCV disease with faster progression, higher HCV viral load and higher mortality (cirrhosis and hepatoma)
- HIV significantly increases MTCT of HCV (from ≈5% to ≈10%), which is probably proportional to HCV RNA level, but this risk is reduced by HAART
- cART should be commenced/continued as per pregnancy/treatment guidelines
  - Boosted PI and TDF-FTC recommended

HIV, HCV and pregnancy

- NVD can be recommended if the mother is receiving suppressive ART
- Check LFTs 2–4 weeks after commencing HAART
  - Drug toxicity, immune reconstitution (with ALT flare)

Postpartum management of HCV/HIV

- Continue cART if:
  - CD4 count <500 cells/μL
- Continuing cART is preferable to stopping if:
  - CD4 count >500 cells/μL and there is liver inflammation/fibrosis
  - CD4 count is 350–500 cells/μL and there is no liver inflammation/fibrosis
- Discontinue cART if:
  - CD4 count >500 cells/μL and there is no HCV viraemia and no evidence of liver fibrosis

Antenatal management

- Fetal ultrasound imaging should be performed as per national guidelines regardless of maternal HIV status
- Pregnancy-associated plasma protein A and nuchal translucency are unaltered by HIV infection or ARVs and are therefore the preferred screening modality for trisomy 21 in HIV-positive women

Antenatal management

- The few data there are on invasive diagnostic testing in HIV suggest that amniocentesis is safe but it is recommended that where possible it should be deferred until VL is < 50 copies/mL
- External cephalic version can be performed in women with VL <50 copies/mL at >36+0 weeks if there is no obstetric contraindication

Mode of delivery and ARVs in labour

- For women with a plasma viral load of <50 copies/mL at 36 weeks, and in the absence of obstetric contraindications, a planned vaginal delivery is recommended
- Elite controllers on ART can aim for an NVD
- For women with a plasma viral load of 50–399 copies/mL at 36 weeks, a pre-labour caesarean section (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

Mode of delivery and ARVs in labour

- PLCS is recommended where the viral load is >400 copies/mL at 36 weeks and for women taking zidovudine monotherapy irrespective of VL with the exception of elite controllers
- VBAC should be offered to women with a VL <50 copies/mL
- ARVs should be continued as usual during labour
- Intrapartum IV zidovudine infusion is recommended for untreated women and women with unknown and/or a VL >100 000 copies/mL in labour or with ROMs, and women having PLCS

Management of labour and ROMs

- Labour should be managed as for HIV-negative women, apart from the following considerations:
  - Forceps should be used in preference to vacuum as less fetal trauma

Management of labour and ROMs

- There is no data on safety of FBS or scalp clip from the HAART era; however, transmission risk is likely to be low if VL <50 copies/mL
- Data from the pre-HAART era has not found an association between MTCT and use of instrumental delivery, amniotomy and episiotomy, therefore the continued avoidance of these procedures is not evidence-based

Management of labour and ROMs

- In spontaneous pre-labour ROMs delivery should be expedited with induction if VL< 50 copies/mL or immediate CS if VL >1000 copies/mL and consideration of CS if VL 50–999 copies/mL depending on actual VL and its trajectory, length of time on treatment, adherence, obstetric factors and woman's views
- PPROMs >34 weeks is managed as per term ROMs with the addition of prophylactic antibiotics
- PPROMs <34 weeks requires multidisciplinary input, IM steroids as per national guidelines and optimisation of virological control

Infant PEP, testing and PCP prophylaxis

- All infants born to mothers with VL<50 copies/mL at delivery should have PEP with 4 weeks of zidovudine only
- These infants are at very low risk of having HIV, and if BCG vaccine is indicated it need not be deferred until testing is complete

Infant PEP, testing and PCP prophylaxis

- Infants born to mothers with VL>50 copies/mL at delivery and no evidence or risk of viral drug resistance should have PEP with 2 weeks of nevirapine and 4 weeks of zidovudine and lamivudine
- For infants born to mothers with VL>50 copies/mL and possible drug resistance, or unable to take enteral medication due to prematurity, seek expert advice on best PEP regimen

Infant PEP, testing and PCP prophylaxis

- Lopinavir/ritonavir should not be given to preterm infants, and should only be given to term infants on expert advice
- All HIV-exposed infants should be tested at birth, 6 weeks and 12 weeks by HIV RNA PCR (viral load) or HIV cDNA PCR with paired maternal sample, and at 18 months by HIV antibody test

Infant PEP, testing and PCP prophylaxis

- Cotrimoxazole prophylaxis from cessation of PEP at 4 weeks until confirmation of HIV status at 12 weeks is only recommended if maternal VL>1000 copies/mL at delivery
- All infants with a positive HIV PCR should be referred urgently for expert care and start cotrimoxazole from age 4 weeks

Breastfeeding

- Exclusive formula feeding should still be recommended to all HIV-positive mothers in the UK
- Breastfeeding by women with detectable viraemia remains a safeguarding concern
- Women with fully suppressed HIV on ART, who choose to breastfeed against medical advice, should be supported to maximise adherence to maintain an undetectable HIV viral load throughout breastfeeding

Breastfeeding

- Monthly testing should be undertaken on mother (HIV RNA) and infant (HIV RNA or DNA) during breastfeeding, and mothers should be encouraged to breastfeed for the shortest time possible
- Breastfed infants require two HIV RNA diagnostic tests one month apart after breast feeding stops, and as for all HIV-exposed infants should have an HIV antibody test at age 18 months

Psychosocial issues

- To maximise the effectiveness of interventions for pregnant women in reducing MTCT the psychosocial context of their HIV infection must not be overlooked
- Care should be delivered by an MDT
- Reassurance about confidentiality is extremely important
- Disclosure should be encouraged in all cases but may be viewed as a process that can take some time

Psychosocial issues

- Women from communities with high levels of HIV awareness may be concerned about HIV 'disclosure by association' when discussing certain interventions, including taking medication during pregnancy, having a CS and avoiding breastfeeding
- The testing of existing children should be raised with all newly diagnosed pregnant women
- Since the guidelines were published HIV care is now free for all individuals living or seeking to live in the UK

Thank you

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