Management of HIV in pregnancy

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Abstract

A cohesive multidisciplinary team approach is key in the management of HIV in pregnancy. The primary aim is to prevent transmission to the neonate but also to support the mother in any issues arising from her pre-existing, or new, diagnosis of HIV. Specialist advice should be sought, wherever possible.

Key areas discussed in this review include antenatal management of the mother (particularly pharmacological management), obstetric management, pharmacological treatment for the neonate and infant feeding. Due to progress made in both in HIV testing, and in the way all patients with HIV in the UK are managed over the last few decades, most women who present with HIV in pregnancy are aware of their diagnosis and on treatment. However, it is not entirely uncommon for women to be diagnosed in pregnancy and it is these cases that present the greater challenge. The cases in this review cover the most common scenarios encountered.

Keywords HIV; pregnancy; obstetrics; pregnancy complications; breastfeeding

Introduction

Without treatment, the probability of vertical (mother to child) transmission of HIV is 15–45%. Advances in antiretroviral therapy (ART) over the last 20 years have meant that this risk can be reduced to below 5% and in the UK is less than 0.5%. Transmission can occur ante, peri- or post-natally (through breastfeeding) and management aims to reduce potential risk at each stage via suppression of HIV viral load in the mother.

Case 1

A 27 year old woman from Romania (G3 P0+2) presents at booking (13/40) with a five year history of known HIV infection for which she has been taking antiretroviral therapy (ART) for three years. She reports good adherence to her medication and has been virally suppressed since starting therapy with no known drug resistance. She has never been immunosuppressed or suffered from any HIV related illness.

She has a history of injecting drug use (IDU) prior to her HIV diagnosis but denies any recent use and completed a methadone programme 18 months ago. She gives a history of two previous first trimester surgical terminations. She has a regular male partner of two years, who is also HIV positive on treatment, and this is a planned pregnancy.

She is currently taking Truvada (Emtricitabine/tenofovir) (once daily) and raltegravir (400 mg twice daily) and folic acid supplementation. She does not take any other regular medications.

Her most recent HIV monitoring bloods (done 5 months prior) show:

- CD4 count of 657 cells/mm^3
- Viral load (VL) $<$ 20 copies per ml.

Initial and pharmacological management

Initial assessment should involve a normal antenatal assessment with additional attention to her HIV history including diagnosis, medication and resistance history, coinfections, and any previous complications. Particular attention must also be paid to sexual history and social history (due to the increased risk of domestic violence in women living with HIV).

There are not many randomly controlled trials (RCT) of ART in pregnancy and best practice in the safety of prescribing ART in pregnancy is mainly guided by observational data. The general principal in women who are already on ART at conception is to continue on the current regimen. Switching therapy may lead to side effects and potential non-adherence, and therefore treatment failure. The only exceptions to this are if the patient is on monotherapy with a protease inhibitor (as opposed to the usual triple therapy) or on the combination of stavudine and didanosine (which are older drugs and very seldom prescribed in recent years due to their side effect profiles).

In addition to routine bloods at booking she should have a baseline CD4 count and VL and these should be repeated at 36 weeks. If the viral load is found to be detectable it should be repeated and sent for resistance testing.

Obstetric management and mode of delivery

Obstetric management including fetal ultrasound imaging should be as per the Royal College of Obstetricians and Gynaecologists (RCOG) guidance in the UK, regardless of HIV status. Additional recommendations include using the most sensitive and specific test available for trisomy 21 to reduce the risk of invasive testing. Invasive testing should only be done after HIV status is known and preferably not before HIV viral load is suppressed. If invasive diagnostic testing is required in a woman who is not on treatment, or viral load is not yet suppressed, she should be immediately commenced on an ART regimen including an integrase inhibitor and also be given a single dose of nevirapine 2–4 hours after the procedure.

Previous advice was for caesarean section to reduce risk of perinatal transmission. However, there is good evidence that there is no difference in transmission rates in those women who deliver vaginally compared to caesarean section as long as the women is taking ART and has achieved viral suppression prior to delivery. As such, for those women with an undetectable viral load at 36 weeks, vaginal delivery is recommended notwithstanding any other obstetric complications as per RCOG guidelines. Any obstetric complications that arise during delivery should be treated as per national guidance. Please see Table 1 for recommendations for mode of delivery based on viral load.

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Recommendations for mode of delivery based on viral load

Viral load (copies/ml) at 36 weeks	Recommended mode of delivery
<50	Planned vaginal (in absence of obstetric contraindications)
50–399	Planned caesarean section (between 38 and 39 weeks) should be considered taking into account the actual viral load and its trajectory, length of time on treatment, adherence issues, the woman's views and obstetric factors.
≥400	Planned caesarean section (between 38 and 39 week) is recommended

Table 1

Neonatal management

All infants born to HIV positive mothers are given post exposure prophylaxis (PEP). In all cases where the mother is virally suppressed prior to delivery, which is defined as <50 copies/ml at 36 weeks, zidovudine (AZT) monotherapy for four weeks is given. Dosing varies according to gestation at delivery and reference to the British HIV Association (BHIVA) guidelines should be made for dosing schedules (see further reading).

In all other cases three-drug therapy should be considered i.e.:

- If the mother is untreated or not virally suppressed
- If the viral load is not known
- If HIV is diagnosed immediately postnatally (see below)

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

Infant feeding

Whilst ART can significantly reduce the risk of post-natal transmission of HIV it does not abolish it completely. The current guidance is that all HIV positive women should be advised to exclusively formula feed their child. However, if the mother does opt to breastfeed, as long as she is virally suppressed, this should not be considered a child protection issue and she should be offered intensive support (see below for further discussion).

Neonatal HIV testing

In exclusively non-breastfed infants, HIV testing with an HIV DNA or RNA PCR should be performed at the following times:

- 48 hours post delivery
- 2 weeks post cessation of PEP (so at 6 weeks of age)
- 12 weeks of age

HIV antibody testing should also be performed at 18–24 months of age to rule out rare cases of HIV seroconversion in the infant without detectable virus on PCR.

If the mother is breastfeeding additional testing should be performed (see below).

Case 1 continued

She has an uncomplicated vaginal delivery at 41 + 2 and is fully compliant with the infant PEP regimen. She has intensive support from the health visiting team and social services (given her history of IDU). She opts to exclusively formula feed as per guidance and all follow up HIV testing in the infant is negative. She continues to remain virally suppressed on her ART regimen.

Case 2

A 34 year old caucasian British commercial sex worker (CSW), G4 P1 + 2, is diagnosed with HIV at booking (14/40) having previously had her last negative HIV test one year ago. She is otherwise well and has no evidence of HIV related illness.

She has had two previous terminations and carried one pregnancy to term and now has a five-year old daughter who is in foster care. That pregnancy was uncomplicated and she had a normal birth.

Initial and pharmacological management

Women diagnosed with HIV in pregnancy should have immediate emotional support and counseling, initially from a sexual health advisor who may then involve peer support, clinical psychology or psychiatry as necessary. Health advisors can be accessed via your local genitourinary medicine (GUM) service. Social services should be informed as necessary. Health advisors will also arrange contact tracing and possible testing of any children from previous pregnancies according to testing history.

Women who are diagnosed with HIV in pregnancy should be referred to GUM services for full sexual health screening and any genital tract infections should be treated in accordance with national guidelines (British Association for HIV and Sexual Health – BASHH). Referral for sexual health screening should also be considered in women with known HIV infection according to risk factors.

Women diagnosed with HIV in pregnancy should be referred for urgent assessment by an HIV specialist clinic where routine bloods for newly diagnosed patients, including screening for viral hepatitis, syphilis and opportunistic infection, as well as HIV specific bloods (CD4, VL and resistance testing) should be sent in conjunction with a thorough assessment by an HIV physician.

All patients newly diagnosed with HIV are now offered immediate ART regardless of immune status at diagnosis and women diagnosed with HIV in pregnancy would also be offered an immediate start. If the woman objects to an immediate start she should at least start by week 24 of pregnancy or by week 14 if her VL >30,000. If her VL >100,000 at diagnosis, she should be strongly advised to start immediately.

The exact ART regimen may vary according to local guidelines, individual physician preference and the viral load and resistance profile, but generally will be standard triple therapy with a dual nucleoside backbone and either a boosted protease inhibitor or integrase inhibitor. If the viral load is unknown or very high (>100,000) then a four-drug regimen, which includes an integrase inhibitor, may be considered.

Once the woman has been started on ART she should have the viral load checked 2–4 weeks post commencement and then at least once per trimester and at 36 weeks. More intensive monitoring may be necessary if she has failure to suppress for any reason. If the viral load is not suppressed as expected, resistance testing should be sent and this would be organized and evaluated by her HIV physician.

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