treating hiv & aids: a training toolkit

treatment during pregnancy and breastfeeding

http://www.aidsmap.com/hatip
Topics covered

- Introduction.
- Preventing parent-to-child transmission.
- AZT as a single therapy.
- Treatment begun late in pregnancy.
- Nevirapine for mothers and infants.
- Combination drug therapy.
- Mode of delivery.
- Breast-feeding.
- Summary.
- Guidelines on managing pregnancy.
- Further reading.

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Facts and figures

Worldwide

- 800,000 children infected in 2003, mostly through mother-to-child transmission.
- 90% live in sub-Saharan Africa.
- 47.5% of 4.7 million new adult infections in 2002 were in women, mostly of child-bearing age.
- Estimated 2.4 million infected women give birth annually.
- More than 600 infants acquire HIV every day, during pregnancy, during birth or through breastfeeding.
- 11 million children estimated to be orphans in Africa due to AIDS

Source: UNAIDS 2002/2003
Pregnancy and HIV: issues for the mother

- An HIV diagnosis may increase a woman’s desire for children
- Pregnancy does not increase the risk of HIV-related illness in women without symptoms
- Pregnancy may increase the risk of further illness in women who already have HIV-related symptoms
- Risk of HIV transmission higher in women with low CD4 cell count (below 200) and/or high viral load
- Pregnant women need counselling about treatment to prevent mother to child transmission, and about planning for possibility that her child could be orphaned
The role of male parents and partners

- Programmes focussing on MTCT can neglect male partners.
- Men should be tested at the same time as women.
- HIV-negative women and their children are at risk of getting HIV from an HIV-positive male partner during pregnancy and whilst breast-feeding.
Factors in mother-to-child transmission

- High viral load or low CD4 count.
- Infection with HIV during pregnancy
- Older age of mother.
- Smoking during pregnancy.
- Frequent unprotected sex or use of illicit drugs during pregnancy.
- No anti-HIV therapy during pregnancy or delivery.
Factors in mother-to-child transmission

- Premature delivery.
- Waters breaking more than four hours before delivery.
- Prolonged or difficult labour (vs planned caesarean section).
- Cervical or vaginal infection.
- Chorioamnionitis.
- Breast-feeding.
Using ARVs to reduce transmission risk

- Short treatment courses for mother and baby using AZT or nevirapine around the time of birth
- Short treatment courses for the infant during breastfeeding using AZT and nevirapine
- Treatment for the mother with triple combination ARV therapy during pregnancy and breastfeeding
Possible ways of preventing transmission with ARVs

- AZT from week 14 of pregnancy
  - AZT monotherapy alone
- Short treatment courses
  - Nevirapine
  - AZT/3TC
  - Nevirapine/3TC
- Treatment for the infant to prevent infection
  - AZT and nevirapine in first week
  - AZT or 3TC throughout breastfeeding
- Combination therapy for the mother
  - Throughout pregnancy and breastfeeding
- Breast-feeding
  - Advice varies with community circumstances

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**Short treatment courses: AZT**

AZT has been tested in several short treatment courses

- **Advantage**
  low risk of resistance

- **Disadvantage**
  taking medication for weeks; many women not diagnosed until late in pregnancy

**Nevirapine** is more effective than AZT for prevention of MTCT

- **Advantage**
  one tablet for the mother at beginning of labour, and one liquid dose for the baby within 72 hours of birth

- **Disadvantage**
  may cause resistance, affecting future treatment options
Short course treatment: nevirapine

- One dose for the mother at beginning of labour
- One dose for the baby 72 hours after delivery (or sooner)
- Nevirapine passes from the mother to the baby and prevents the virus taking hold in the infant’s body
- Reduces risk of transmission by 50% compared with AZT

Problems:
- Women must know that they are HIV-positive
- Women who know they are HIV+ must remember to take nevirapine during labour
- The baby must be given nevirapine liquid at the right time (where will it be stored, who will give it to the baby, who else needs to know?)
- Risk of resistance to nevirapine and efavirenz for the mother
Short course ARVs: multiple drugs

- AZT + 3TC

- AZT + 3TC + single doses of nevirapine
  reduced transmission rate to 5%
Short treatment course: ARVs for the infant

- **AZT and nevirapine in first week of life**
  - One dose of nevirapine soon after birth + one week of AZT
  - Reduced transmission rate to 7% at 6 weeks of age in large South African study
  - No follow-up to show what happened at end of breastfeeding

- **3TC or nevirapine throughout breastfeeding**
  - Up to six months treatment for infant, no treatment for mother beyond first week of life
  - Reduced rate of transmission to 10% by end of breastfeeding
  - Quite a high rate of side effects
  - Mothers stopped breastfeeding after an average of 100 days – is this achievable?
  - One week of treatment for mother may have made a difference to the result
Ongoing studies

- The HIV Prevention Trials Network study 046
  - Nevirapine for the infant throughout breastfeeding (max 6 months)

- MASHI study
  - AZT for the infant for six months
    (placebo controlled – half will receive liquid without AZT in it)
Combination therapy for mothers

- Best way of protecting health of both mother and child
- Sometimes called MTCT-Plus
- MTCT Plus programmes aim to treat mother so that she can live to bring up child, and prevent infection of infant
- Recommended combination:
  - AZT/3TC/nevirapine
  - Efavirenz may harm unborn child, d4T increases the risk of some side effects for mother
- MTCT Plus programmes recommend combination therapy for all pregnant women with CD4 count below 350 and mild symptoms (WHO stage Two and beyond) or more serious illness
- Side effects for infant?
Combination therapy for mothers

- **Treatment during early pregnancy:**
  - Unborn child is most vulnerable during first 14 weeks in the womb
  - If already on treatment, stopping at this time may increase risk of viral load rebound
  - Risk of side effects appears very small
  - Protective effect of treatment outweighs risk of treatment, except in case of efavirenz
  - Side effects for the mother?
  - Pregnancy increases risk of side effect from d4T (stavudine) called lactic acidosis throughout pregnancy, which can be life threatening
Questions (1)

- How much does AZT reduce the risk of mother to child transmission?
- Is AZT the best choice for reducing the risk of mother to child transmission?
- When is the time of highest risk for HIV transmission from mother to child?
- What are the effects of antiretrovirals on the unborn child?
- What are the effects of antiretroviral drugs during breastfeeding?
- Can women become infected with HIV during pregnancy?