



# **Special issues: Women and Children**

**Part B Module B2  
Session 2**

# Objectives



1. Discuss specific considerations affecting the use of ARVs in women
2. Summarize how ART is used for PMTCT
3. Summarize infant feeding recommendations
4. Discuss issues unique to care and treatment of paediatric HIV



# Introduction

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- Women and children have a few issues that are unique in HIV care and treatment
- A few of those issues will be *summarized* in this session



# Special considerations

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- Factors to consider regarding women and their HIV care:
  - Psychosocial issues
  - Choice of antiretrovirals in women of childbearing age
  - Antiretroviral use during pregnancy
  - PMTCT
- Factors to consider regarding children and their HIV care:
  - Infant feeding
  - Transmission and natural history
  - Medication availability and dosing
  - Special adherence issues
  - Disclosure



# Psychosocial issues and women

- Women have several psychosocial issues that are unique regarding their HIV care, including:
  - Gender inequalities and their effect on:
    - Seeking care
    - Prevention efforts
  - Burden of caring for the family may supersede caring for herself
  - Others?




# Choice of antiretrovirals

- All antiretrovirals are safe for use in women
- However, in women of childbearing age, the fact that she may get pregnant affects choice of antiretrovirals
  - EFV in particular can cause birth defects (teratogenicity)
- Other medicines, primarily NNRTIs and PIs, may reduce effect of oral contraceptives
- Women should be counselled regarding their desire to have children
  - *Unintended* pregnancies should be discouraged

# HIV-infected women on ART who become pregnant

- Options are:
  - Suspend therapy temporarily during first trimester
  - Continue same therapy
  - Change to a different regimen
- Issues to consider:
  - Gestation of the pregnancy
  - Severity of maternal disease
  - Tolerance of regimen in pregnancy
  - Potential for adverse fetal effects

\* Fetus most susceptible to potential teratogenic effects of drugs during the first 10 weeks of gestation. Risks of ART to fetus during this period are unknown



## Approaches to HIV-infected women who received short-course ARV prophylaxis to reduce MTCT and require treatment postpartum

- Short-course ARV regimens, that do not fully suppress viral replication, may be associated with development of ARV drug resistance
- The Ugandan HIVNET 012 study of single dose intrapartum/newborn NVP for prevention of MTCT found that 19% of the women developed resistance to the drug. This was associated with delivery, HIV viral load and CD4 cell count.
- The women who had the highest risk of having resistance with the single dose of NVP are those who should have gotten HAART (3 drugs)



# NVP, PMTCT and ART for Women

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- Not enough evidence is available for recommendations regarding nevirapine use in women following single dose NVP for PMTCT
- Strongly consider using protease inhibitors as first line therapy for women who have received single dose nevirapine.



# HAART and pregnancy

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- HAART (3 ARVs in combination) has been shown to dramatically reduce the transmission of HIV to the infant
  - This is used in most women in industrialized countries
  - Has been safe
  - Must weigh risks vs. benefits of HAART when determining whether to use it or do short-course prophylaxis

# ART and Breastfeeding



- Women who require ART and are breastfeeding should continue their ongoing ART regimen
- Efficacy of potent ART for mother, used solely to prevent postnatal transmission of HIV through breast milk is unknown, but is currently being studied



# PMTCT and infants

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- An ideal PMTCT regimen would be feasible, safe, and effective
  - In theory, an HIV-negative generation can happen if PMTCT is effective
- Single dose nevirapine and infants
  - Because infants (particularly those infected BEFORE labor and delivery) may have a high viral load, there is a high risk of resistance (46% in the HIVNET 012 study)
  - However, more children were born HIV-negative than if no nevirapine was used



# Infant Feeding

- Families should be counselled regarding infant feeding methods, and their decision should be supported
- Breastmilk substitutes should be considered if substitutes are:
  - Available
  - Feasible
  - Affordable
  - Safe
  - Sustainable
- Otherwise, exclusive breastfeeding for the first six months of life is recommended, with early weaning

# Diagnosis of HIV Disease



- The majority of infants are diagnosed on the basis of symptoms and a positive test of the mother or child
  - Passively transferred maternal HIV antibody may persist for up to 18 months
  - To establish a definitive serologic diagnosis, the test should be repeated at 18 months
  - Viral diagnostic assays—PCR— can be used for detection of HIV in children less than 18 months, but due to their complexity and cost these tests are not readily available everywhere



## Modes of Infection

- Published estimates of MTCT rates of HIV-1 range from 15-45% depending on whether the child is breastfed or not and the length of breastfeeding.
- Most infections seem to occur during labor and delivery.
  - The transmission rate increases due to breastfeeding:
    - 75% of breast milk transmission occurs in the first months of life



# Natural Course of HIV Disease in Children

- HIV RNA levels in perinatally infected infants
  - generally low at birth (<10,000 copies/ml)
  - increase to high values by age 2 months (>100,000)
  - decrease slowly after the first year
- CD4+ cell count and percentage values in uninfected infants:
  - considerably higher than in uninfected adults
  - slowly decline to adult values by age 6 years

**Table: HIV pediatric classification system immune categories based on age-specific CD+ cell count and percentage**

| Immune category                             | Child's age                 |                  |                  |                  |                |                  |
|---|-----------------------------|------------------|------------------|------------------|----------------|------------------|
|   | <12 months                  |                  | 1-5 years        |                  | 6-12 years     |                  |
| <b>Category 1:<br/>No suppression</b>       | <b>&gt;1,500<br/>No./ml</b> | <b>(&gt;25%)</b> | <b>&gt;1,000</b> | <b>(&gt;25%)</b> | <b>&gt;500</b> | <b>(&gt;25%)</b> |
| <b>Category 2:<br/>Moderate suppression</b> | <b>750-<br/>1,499</b>       | <b>(15-24%)</b>  | <b>500-999</b>   | <b>(15-24%)</b>  | <b>200-499</b> | <b>(15-24%)</b>  |
| <b>Category 3:<br/>Severe suppression</b>   | <b>&lt;750</b>              | <b>(&lt;15%)</b> | <b>&lt;500</b>   | <b>(&lt;15%)</b> | <b>&lt;200</b> | <b>(&lt;15%)</b> |



## Natural Course of HIV Disease in Children, continued

- Symptomatology
  - A significant proportion of children have early and rapid progression of disease in infancy
  - Immune system is being attacked even before it can develop
    - Have no memory T cells and fewer specific antibodies
  - Some children may not have symptoms until adolescence, following the adult course of not having major symptoms for 10 years after infection



# Medication availability and dosing

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- Some ARVs: not available in liquid or chewable or dissolvable form
- Some medications have not been tested in children and therefore are not indicated
- Dosing is weight-based and a few are based on body surface area (taking into consideration a child's height as well)



# Adherence issues for children

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- Children are dependent on the caregiver to remember to administer medicine
- Children may wonder why they have to take medicine and others don't
- Poor taste of medicine impacts adherence
- If multiple caregivers involved, one may assume that others have given the medicine when they have not



# Disclosure

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- Disclosure in adults refers to the adult telling other people about his/her own diagnosis
- In children, disclosure additionally refers to when to tell the child about his/her diagnosis
- Concerns surrounding child telling other children, psychological impact, depression