PMTCT: Setting the scene

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South African PMTCT success

Is PMTCT ART?

Antiretroviral THERAPY

Antiretroviral PROPHYLAXIS
**Prevention** [-ven′shən]
Etymology: L, praevenire, to anticipate
the keeping of something (such as an illness or injury) from happening.

**Prophylaxis** [prōˈfilakˈsis]
Etymology: Gk, prophylaksis, advance guard
Prevention of or protection against disease

**Treatment** [trēt`ment]
Etymology: Fr, traitement
1. the management and care of a patient; see also care.
2. the combating of a disease or disorder; called also therapy.

**Therapy** /ther·a·py/ (-pe) the treatment of disease; see also treatment
Objective of AR T(herapy)

- Slow disease progression
- Recover health
- Prevent death
- Reduce illness

TARGET: HIV-infected individual
Objective of AR P(revention)

- Stop acquisition of HIV infection

- TARGET: HIV UNinfected individual
ART vs ARP: what’s the difference?

Regimen

- **Triple drug regimen**
  - Increasing number of drugs to choose from
  - Increasing standardization of regimens

- **Evolving regimens**
  - Single drugs AZT → NVP
  - Dual e.g. AZT+NVP
  - Triple e.g. AZT,3TC,NVP

Indistinguishable
ART vs ARP: what’s the difference?

Duration

• **Lifetime**

• **Evolving**
  - Single dose
  - Pregnancy
  - Varying durations after delivery
  - Lifetime

Indistinguishable
ART vs ARP: what’s the difference?

Who

- Single individual: adult or child
- Two individuals: mother and child
  - Maternal components
  - Child components

Distinct
ART vs ARP: Mother’s point of view

- Protect my child (ARP)
  - All
- Protect me (ART)
  - Those in need (CD4 criteria)
ART/ARP positive synergy

Treatment

Prevention

<200
ART/ARP positive synergy

Treatment

Prevention

<350
ART/ARP positive synergy

Treatment

<500

Prevention
ART/ARP positive synergy

Treatment

Prevention
Questions raised by the B+ approach

• Is ARP ART for mothers with higher CD4 counts?
  – Women with CD4 >500 worse outcomes than HIV-negative
  – Benefits of ART in this group?

• Will ARP for more mean ART for fewer?
B+ Zero-sum gain approach

Treatment

Prevention

<350

100

100
B+ Zero-sum gain approach

Treatment

Prevention

<350

50

50
B+ Operational benefits

Treatment

Prevention

<350

100

100
Simplification leads to increased coverage
Critical question for implementation science:

Will B+ increase or decrease coverage of ART for women with low CD4 counts?
ART vs ARP: Child’s point of view

- Protect my mother (ART)
  - All
- Protect me (ARP)
  - All
Value of integrating treatment and prevention

>80% of postnatal transmissions

88% of maternal deaths

Critical question for implementation science in PMTCT:

Will B+ increase or decrease coverage of ART for women with low CD4 counts?
ART vs ARP: Child’s point of view

• Protect my mother (ART)
  – All (esp if my mom has low CD4 counts)

• Protect me (ARP)
  – All (esp. if my mom has low CD4 counts)

• Protect me if I get HIV
  – ART
  – Find me
Finding INfants with HIV Disease and Evaluating Resistance (FINHDER)

Karl Technau Ashraf Coovadia
Elaine Abrams Gayle Sherman
Lynn Morris Gillian Hunt
High mortality in HIV-infected infants and young children under 24 months of age in Johannesburg, 2011

- 24% mortality 6 months after identification
- 83% started ART in median time 8 days
- 20% identified in routine PMTCT follow-up
PMTCT exposure is common among newly-diagnosed HIV infected infants in Johannesburg.
PMTCT exposure is common among newly-diagnosed HIV infected infants in Johannesburg.

PMTCT: 66%
No PMTCT: 34%

NNRTI resistance: 25%
Prevalence of NNRTI mutations among 155 PMTCT-exposed newly-diagnosed HIV-infected infants in 2011 by age when tested.
Drug resistance in infants is a marker of good coverage of PMTCT.
Better outcomes in HIV-infected infants exposed to PMTCT
Bright future of PMTCT

- Expanding understanding of the role of ARV in ART and ARP
- Impressive uptake of ART for ARP
- Not perfect
- Weak link is infant diagnosis
- Need to ensure greater access of children to ART