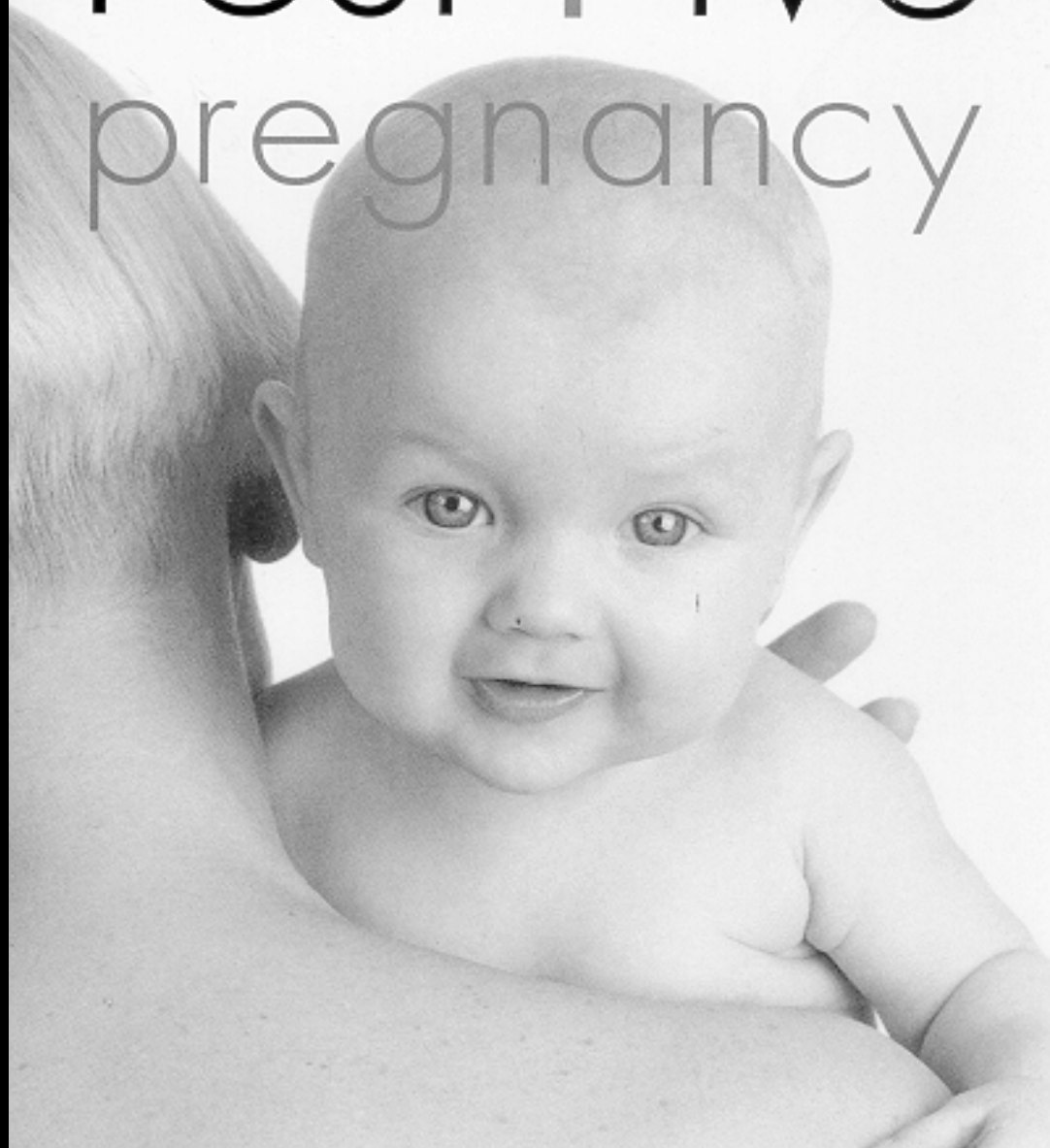
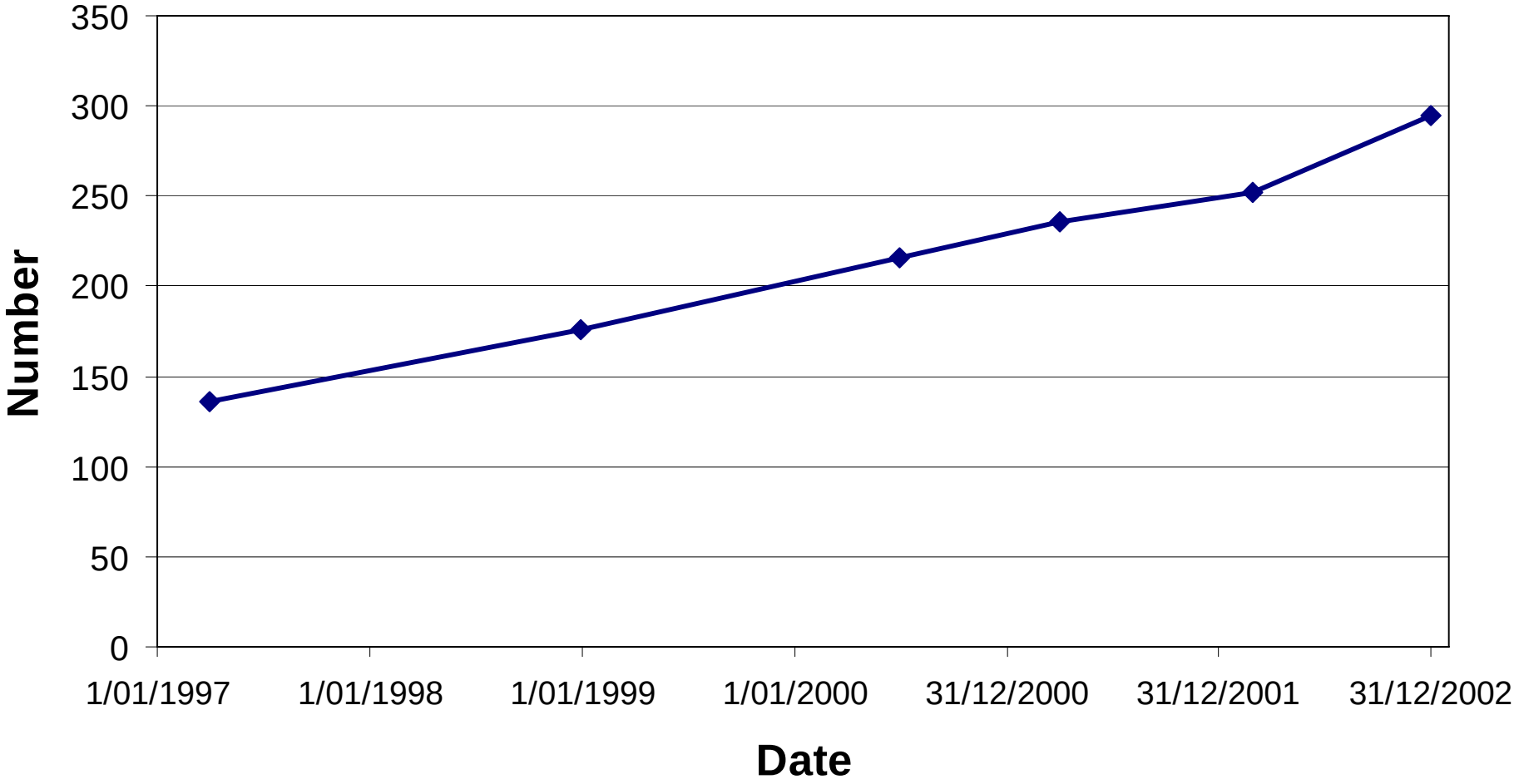
Positive pregnancy



CUMULATIVE PERINATAL HIV EXPOSURE, AUSTRALIA



Reported number of perinatally exposed children in Australia, 1982 - 2002

Timing of the woman's HIV diagnosis	1982 - 1992	1993 - 1997	1998 - 2002	Total
Antenatal	*33*	*49*	*103*	*185*
Postnatal	*59*	*35*	*15*	*109*
Total	*92*	*84*	*119*	*295**

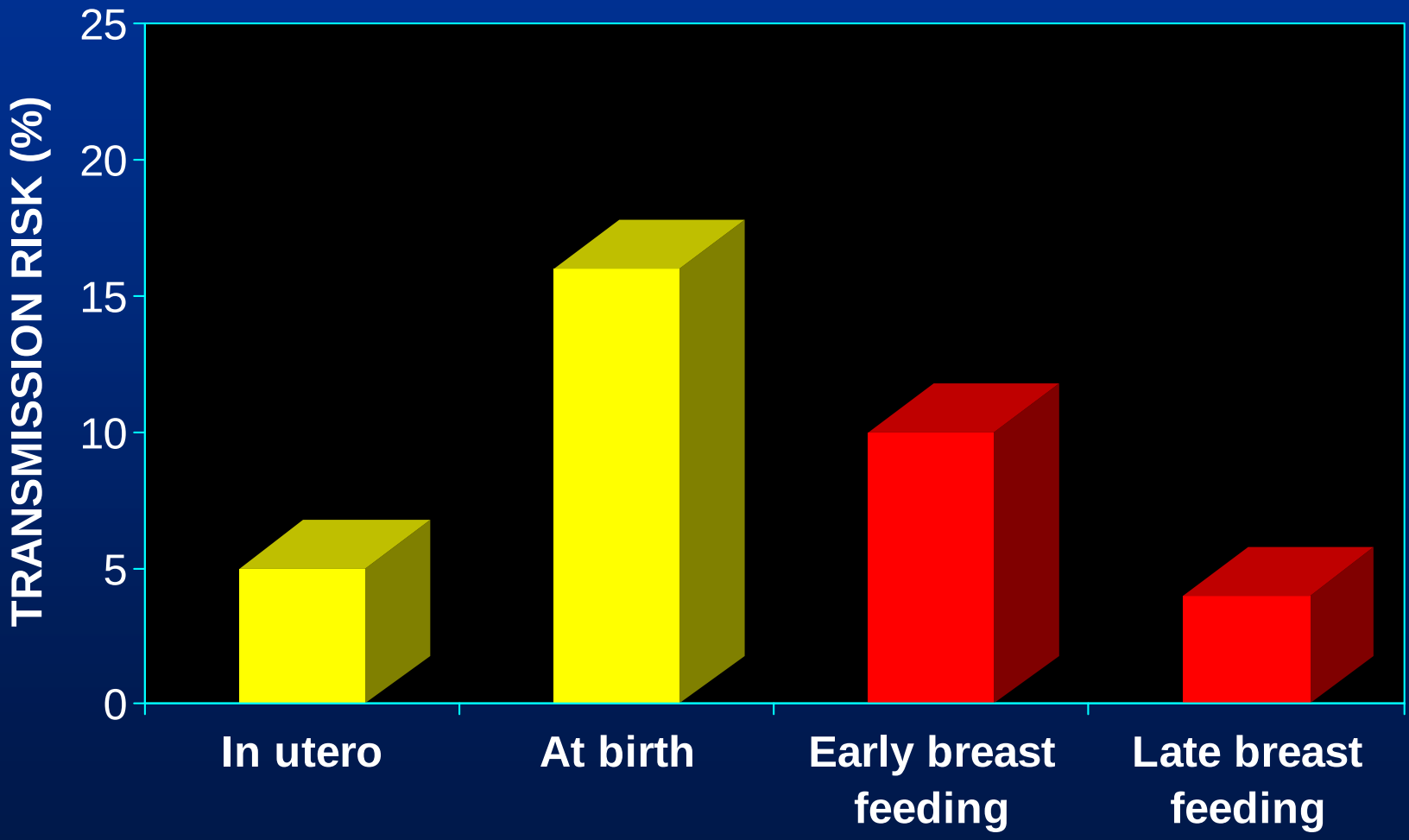
* n = 232 women (74% heterosexual, 13% IDU)
71/295 infants infected (24% tm rate)

July 2004

Number of exposed children, 1993 - 2002, and number (%) with infection by year of birth

Year of child's birth	Number exposed	Number with infection	% with infection
Child born 1993 – 1997	84	29	34.5
Woman diagnosed antenatally	49	12	24.5
Woman diagnosed postnatally	35	17	48.6
Child born 1998 – 2002	118	8	6.8
Woman diagnosed antenatally	103	0	0.0
Woman diagnosed postnatally	15	8	53.3

Timing of Perinatal Infection
(no antiretroviral prophylaxis)



What Is the Risk of Mother-to-child Transmission (MTCT) of HIV ?

- Historically, up to 60%, but declining over the years
- Currently, in less developed settings, 30-40%
- And 20 – 25% in developed setting without intervention
- Can be 1-2% with intervention strategies

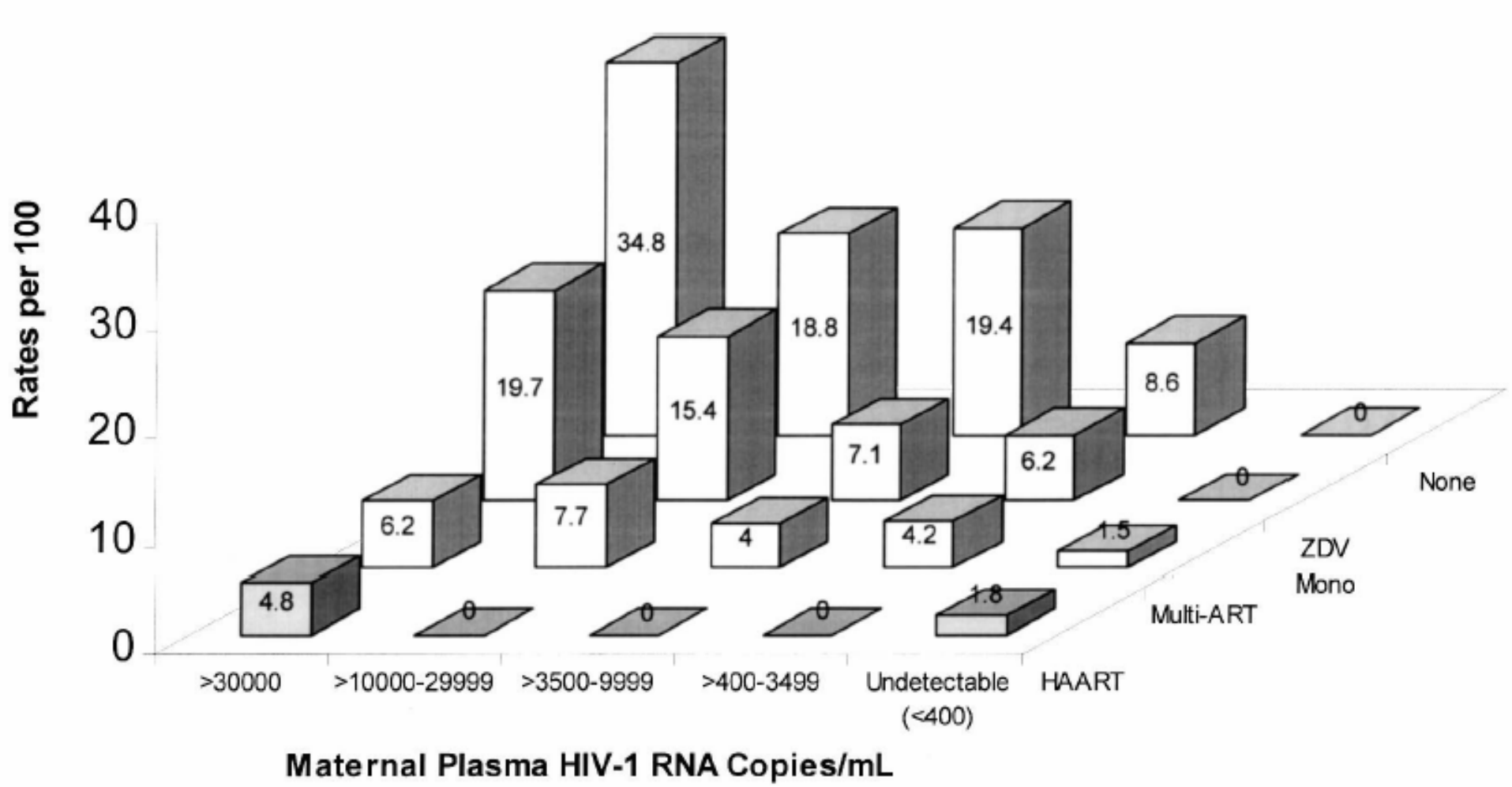
Factors Affecting the Risk of MTCT of HIV

- Maternal viral load
- Maternal state of immune suppression (HIV infection vs AIDS)
- Obstetric factors (e.g. duration of membrane rupture prior to delivery)
- Mode of delivery
- Gestational age at birth
- Breast feeding
- Others

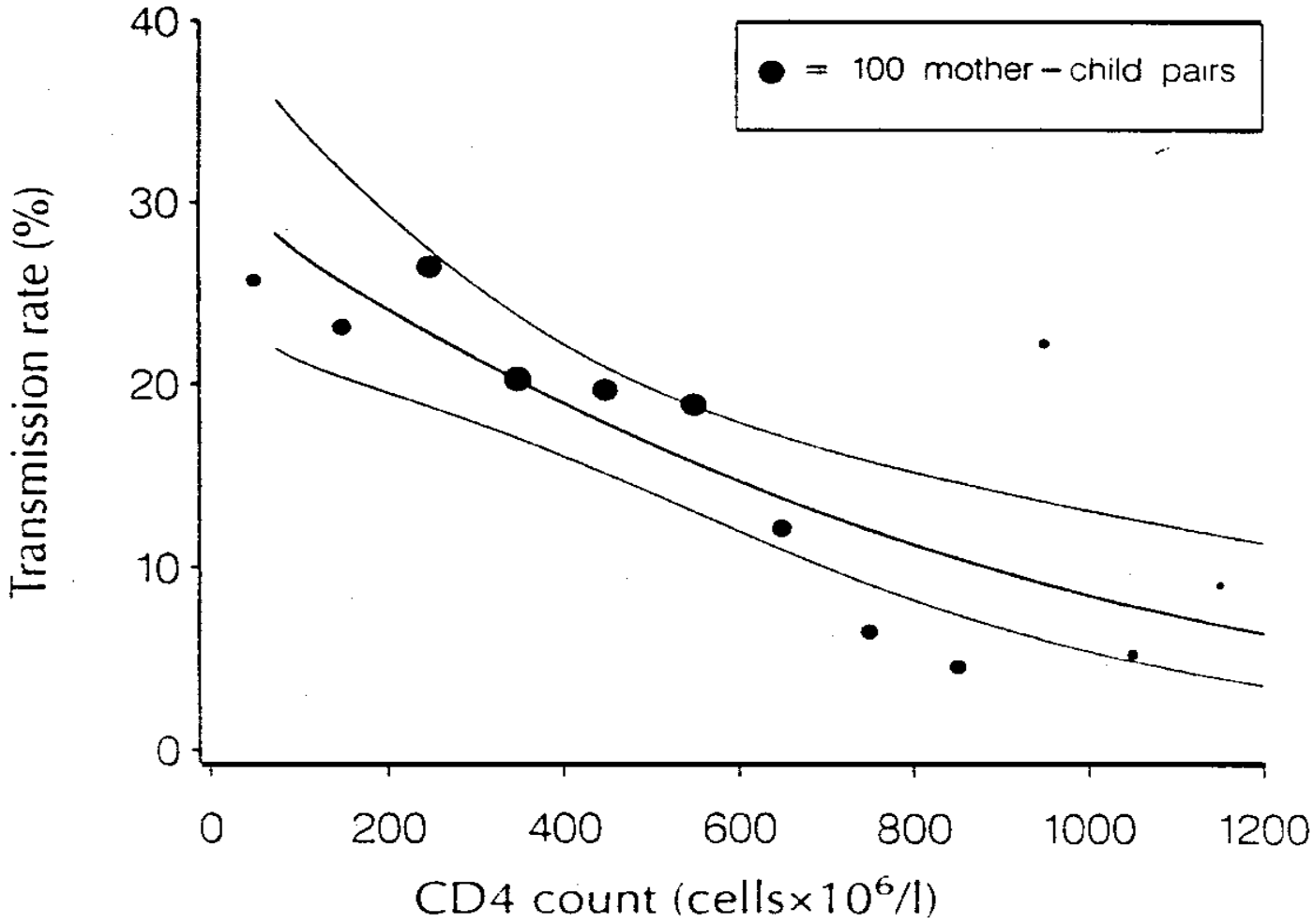
Is there a safe threshold viral load?
i.e. a level below which HIV transmission does not occur?

MATERNAL ANTIVIRAL THERAPY AND VIRAL LOAD
Effects on perinatal transmission

WITS prospective study: Cooper et al. JAIDS 2002;29:484–494

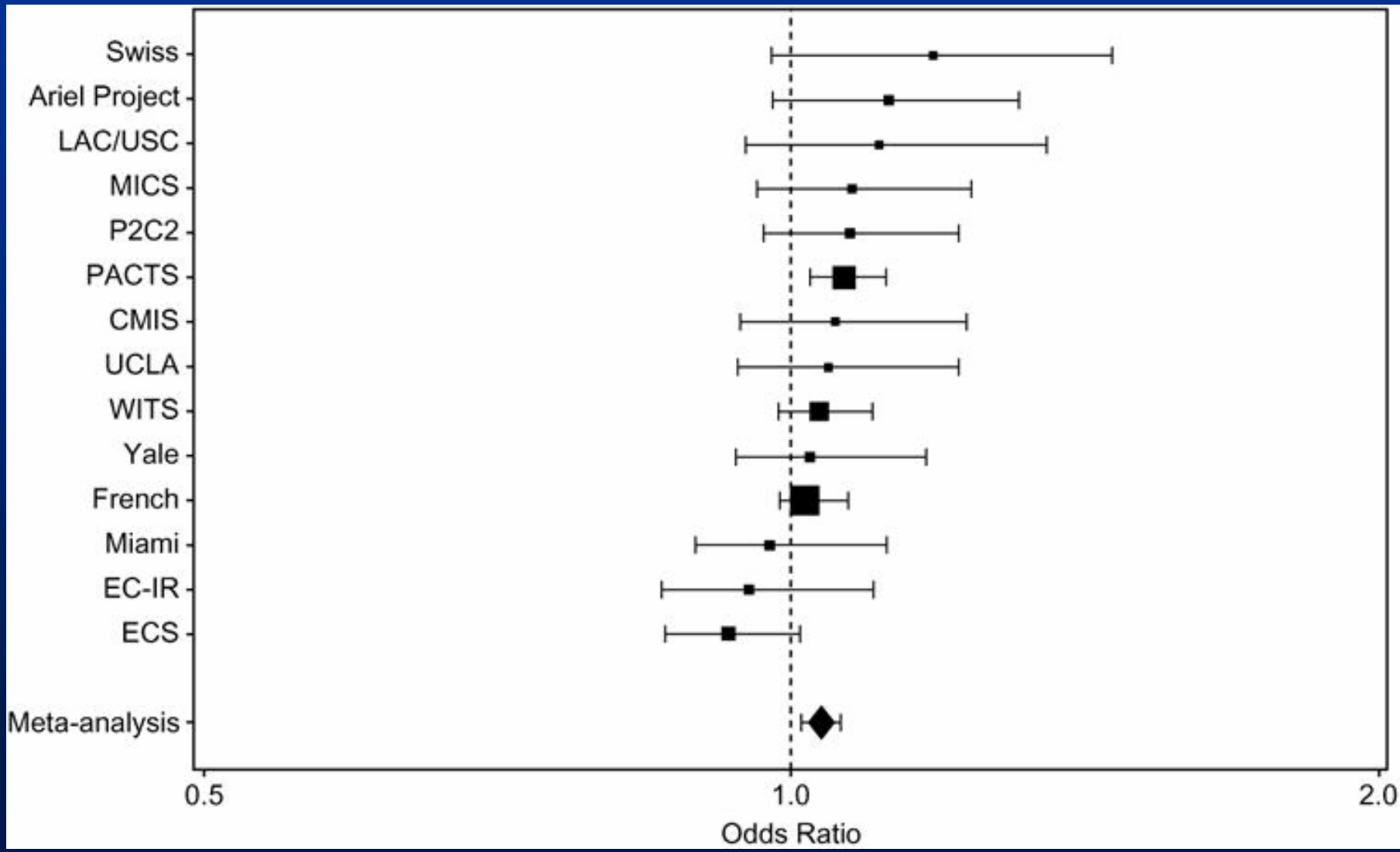


Maternal CD4 Lymphopenia and Tm Risk
(European Collaborative Study, AIDS, 1996)

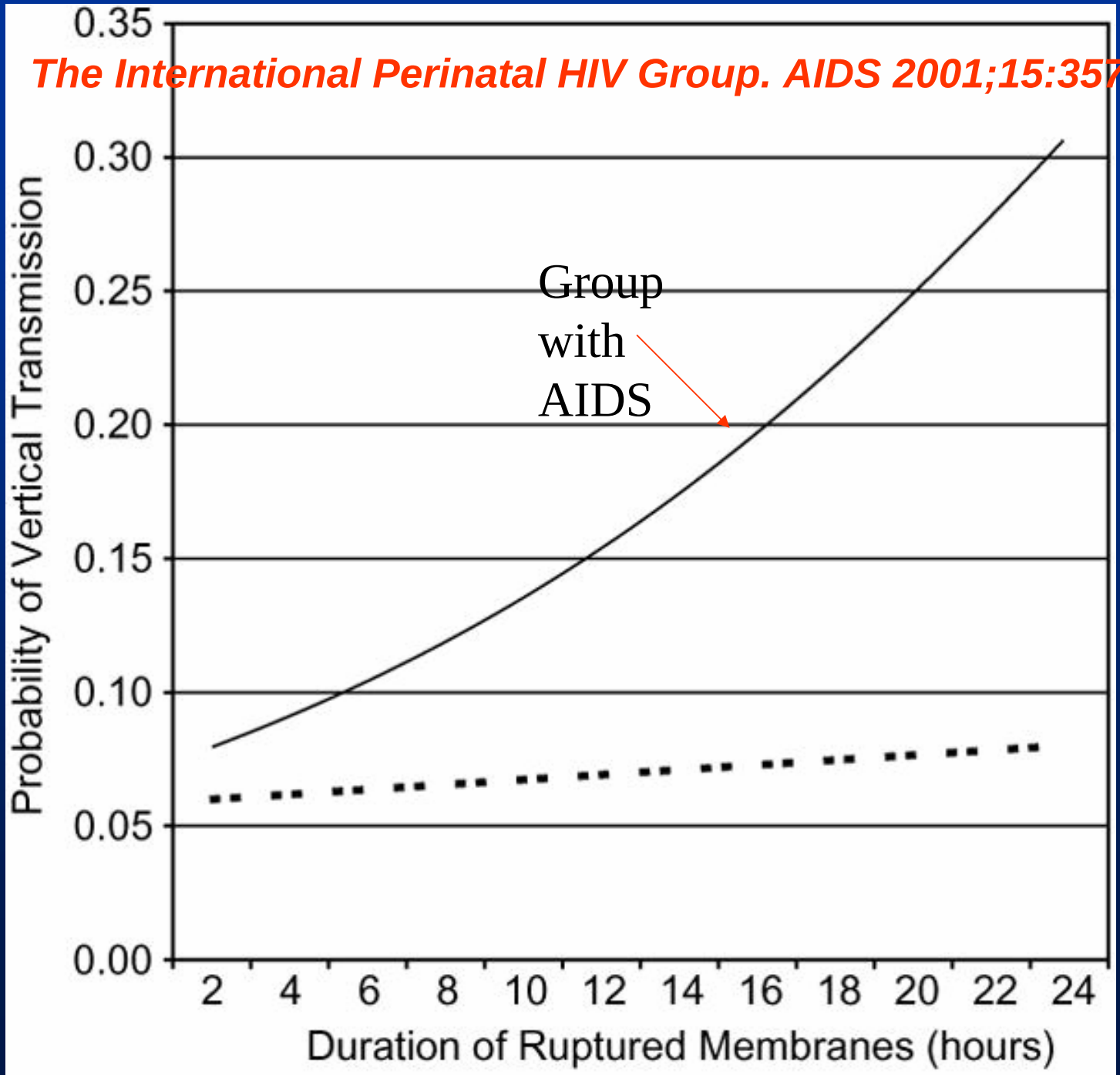


Association with duration of membrane rupture

The International Perinatal HIV Group. AIDS 2001;15:357-68

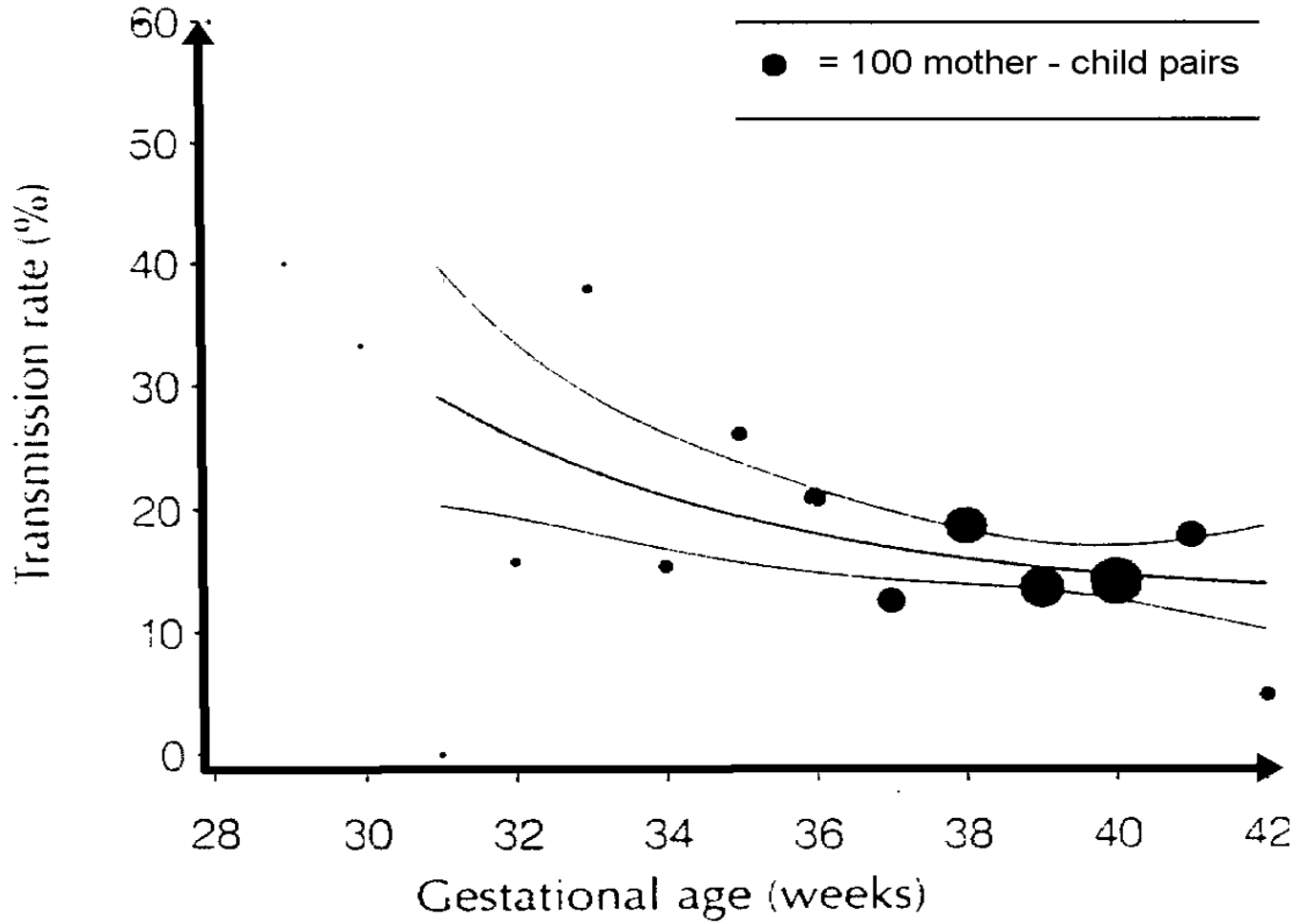


The International Perinatal HIV Group. AIDS 2001;15:357-68

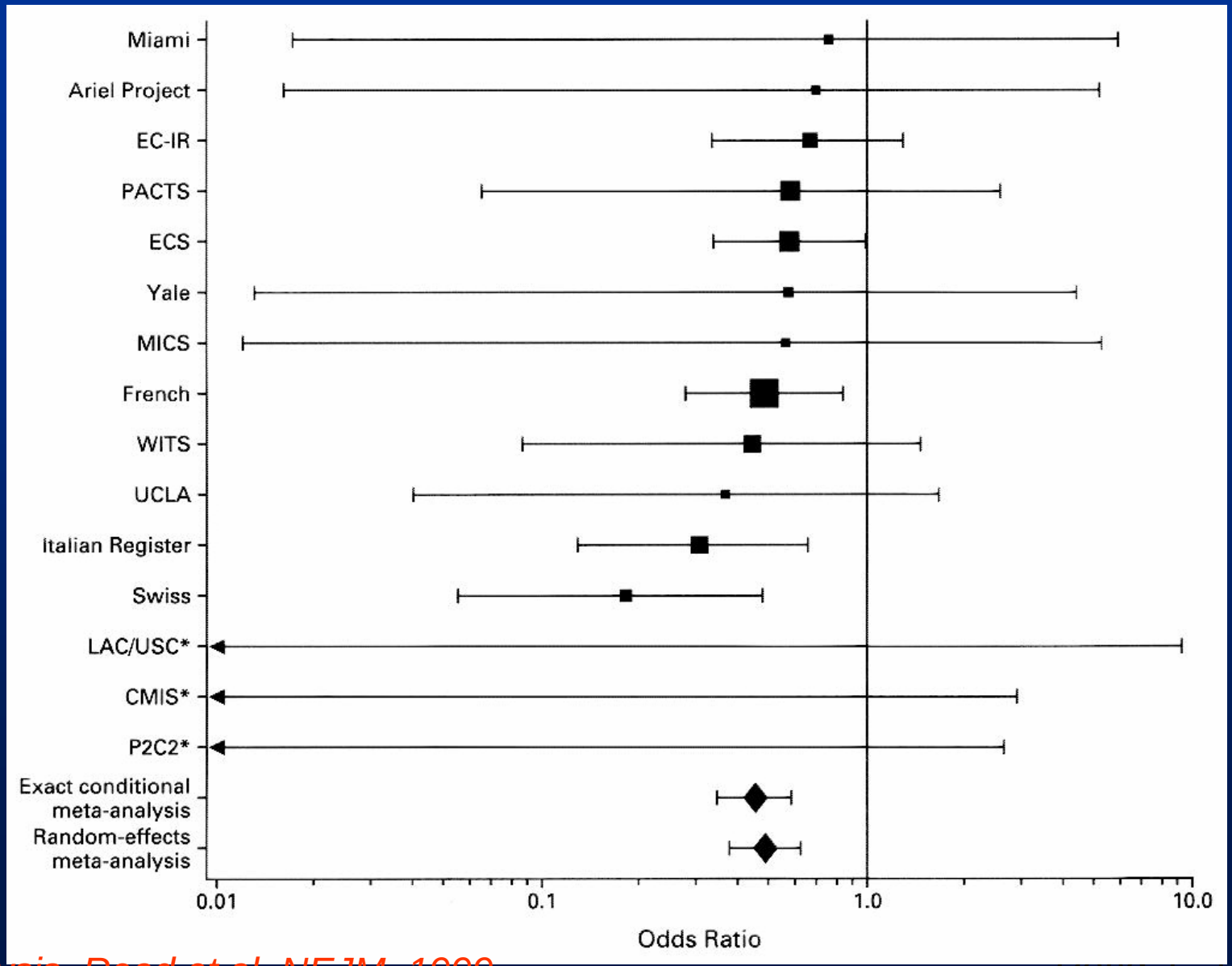


Prematurity and transmission risk

(European Collaborative Study, AIDS, 1996)



Impact of elective caesarean section on transmission

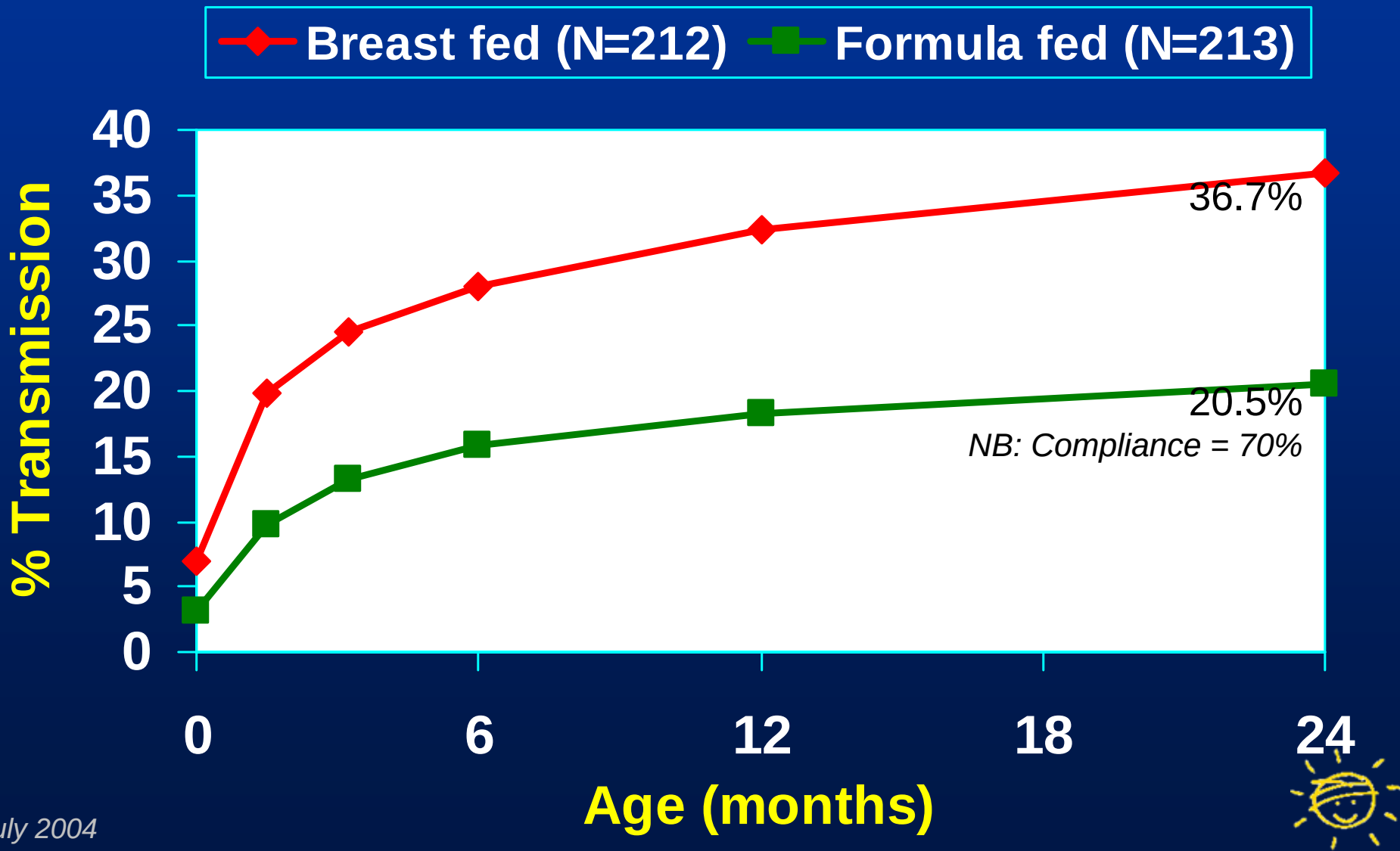


Metaanalysis, Read et al, NEJM, 1999

Read J., 1999

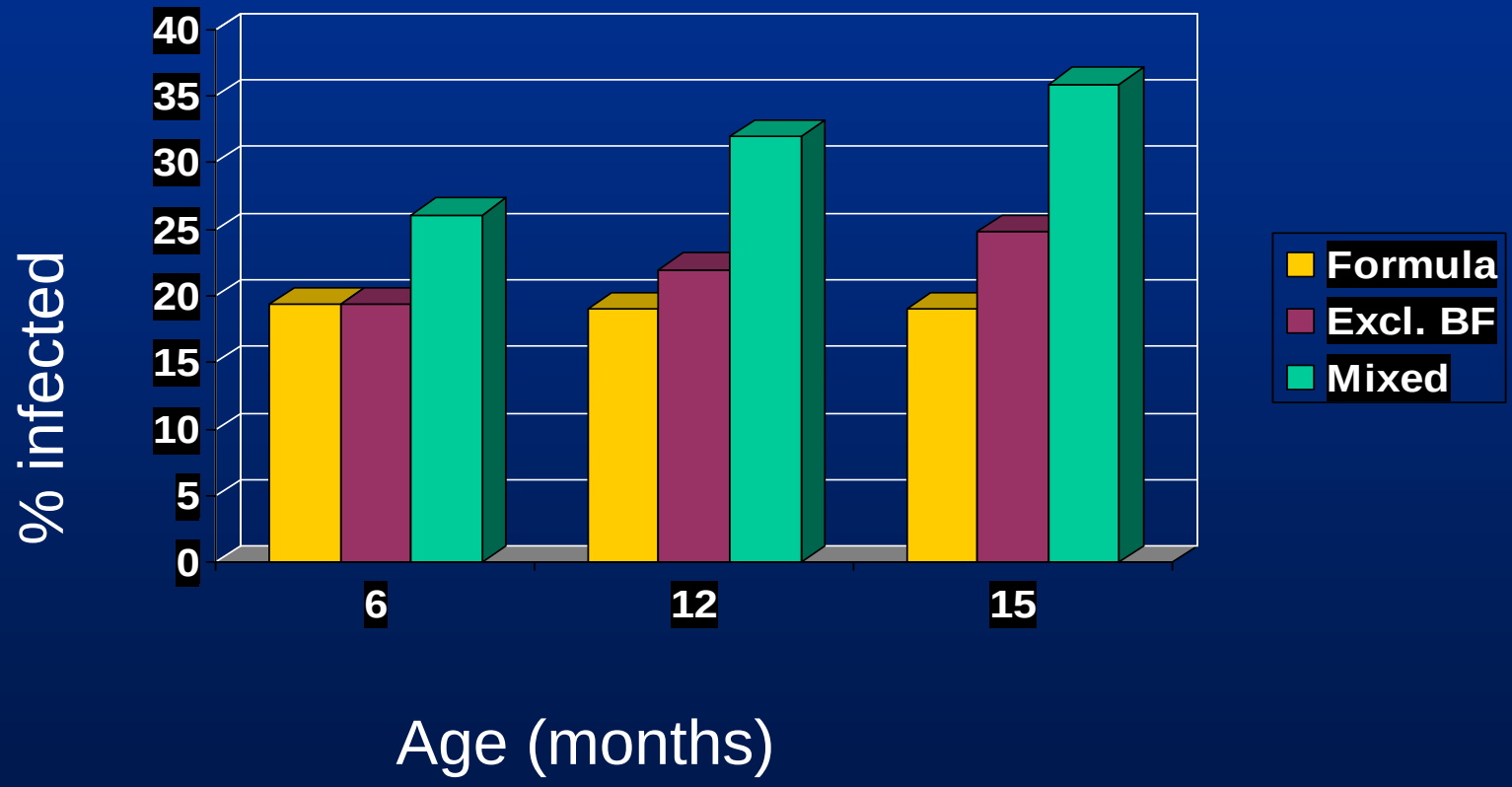
Randomised, controlled trial of breast v. formula feeding, Nairobi

Nduati et al. JAMA 2000;283:1167-1174



Influence of pattern of feeding on transmission

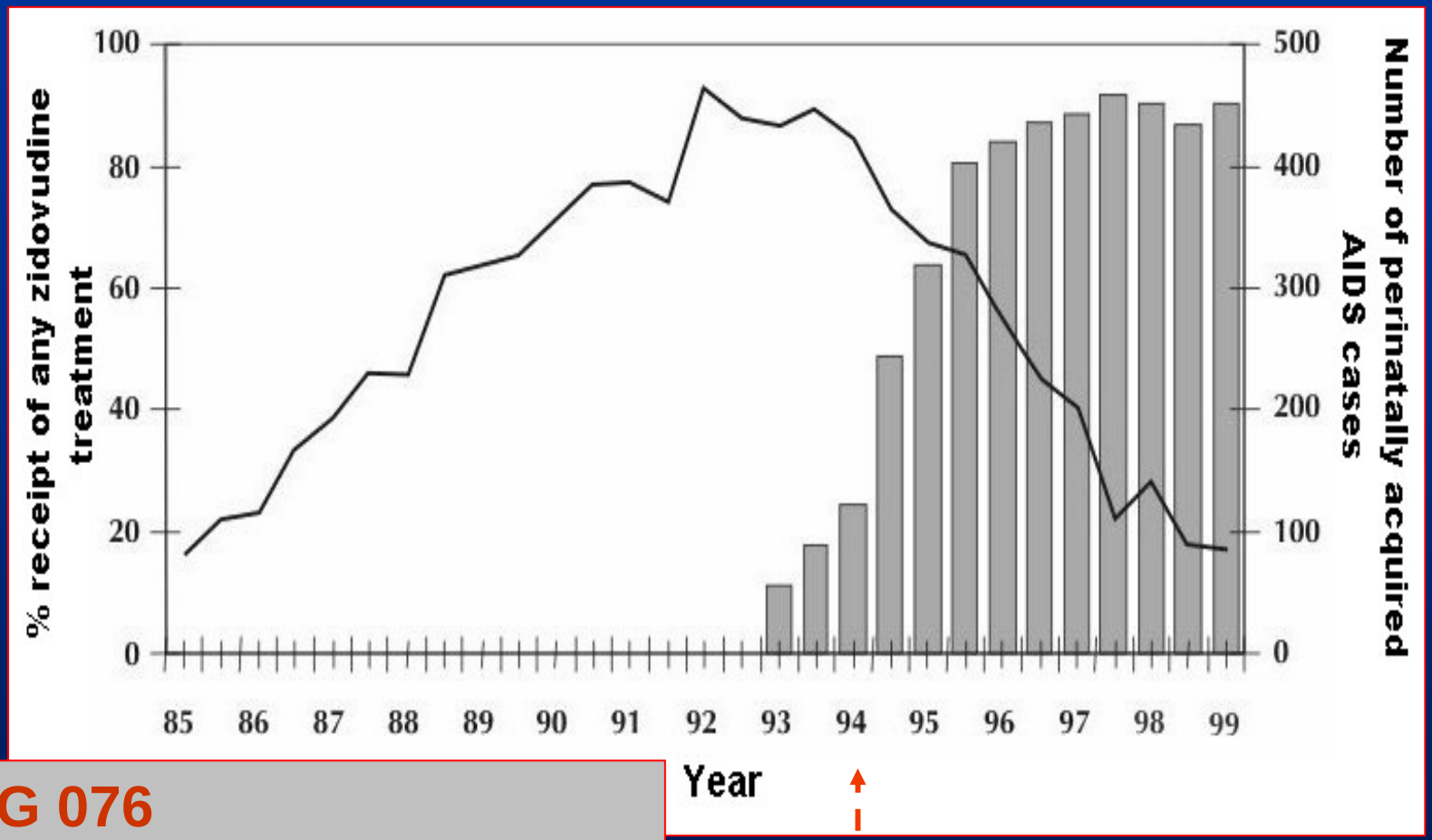
Coutsidis, AIDS, 2001



What Are The Strategies for Preventing Transmission?

- Antenatal screening
- Antiretroviral therapy (ARV)
- Mode of delivery
- Not breast feeding
- ? Obstetric factors at delivery (eg avoidance of invasive procedures)

Receipt of perinatal ZDV and PNT AIDS trends



PACTG 076

25% tm reduced to 8% (67% ↓)

- 3 part AZT regimen
- AZT to mother (T2 or T3)
- AZT, IV, in labour
- AZT to infants, 6 weeks

TIMING OF AZT PROPHYLAXIS AND RISK OF POSITIVE PCR

(Wade, NEJM 1998;339:1409-14)

RISK RELATIVE

0
0.2
0.4
0.6
0.8
1
1.2
1.4

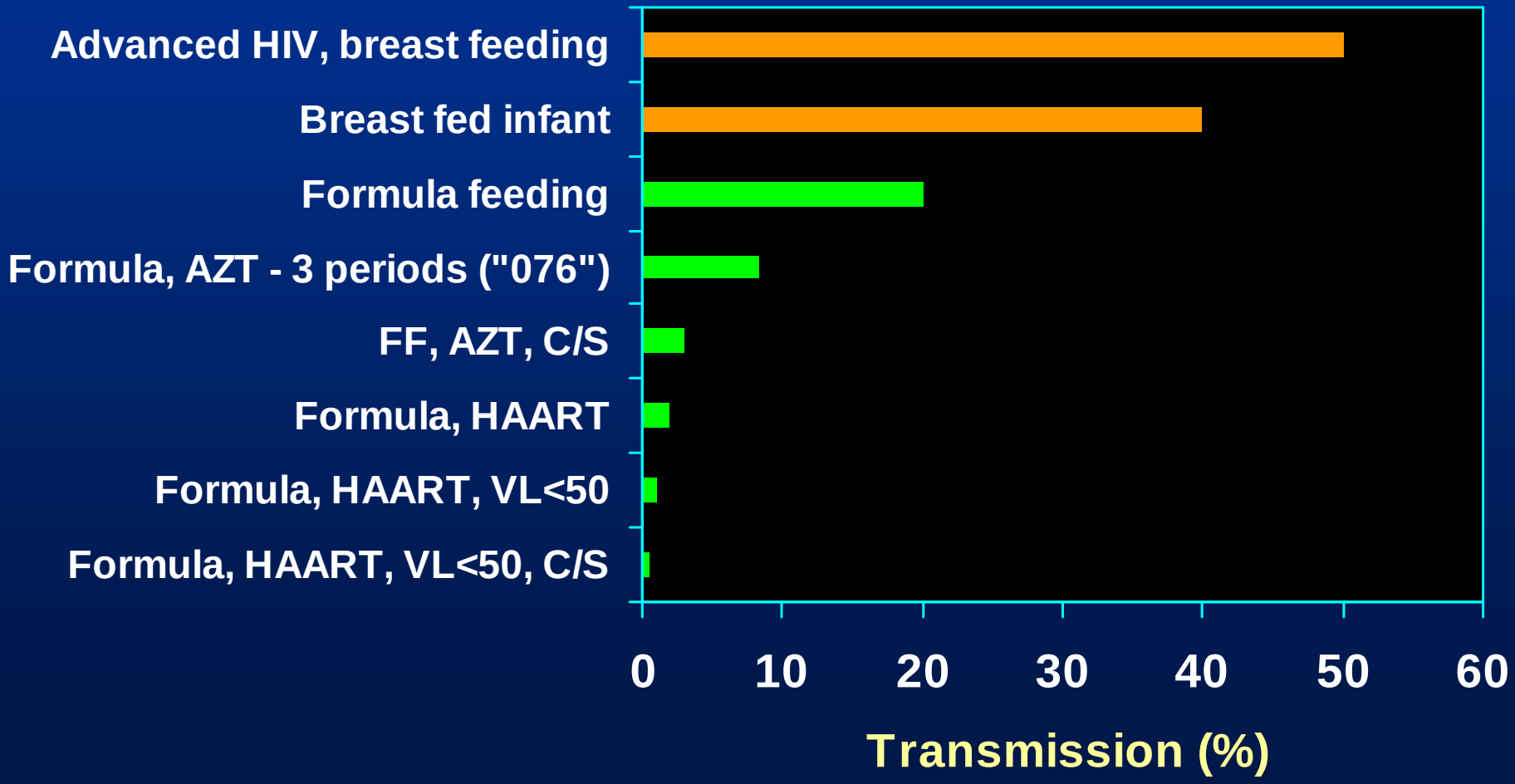
NONE | Prenatal | Intrapartum | < 48 h | >= 3 d

* p<.05 compared to NONE

*
*
*

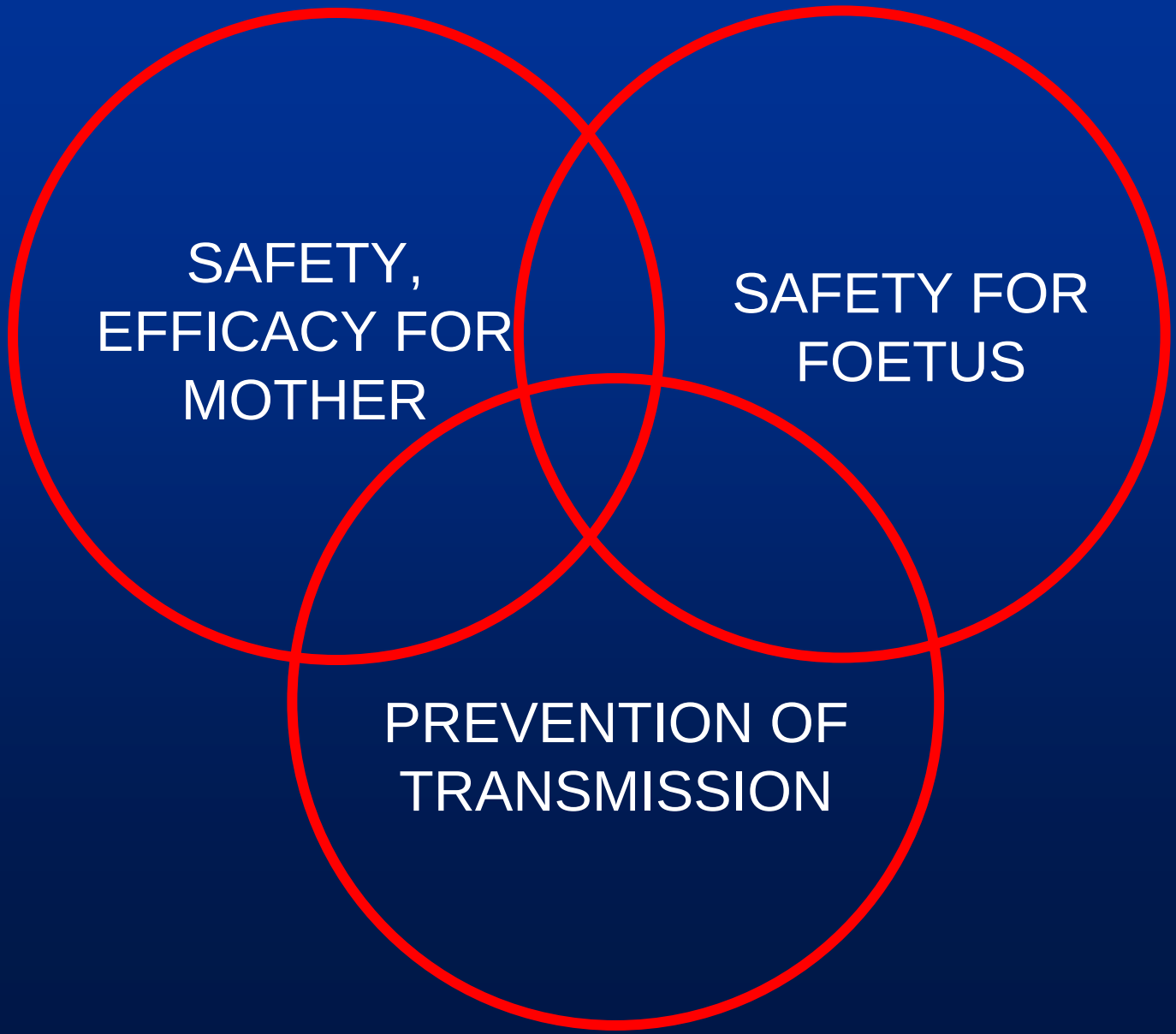
Summary

Transmission risk in various "intervention" settings



What to do about ARV during pregnancy?

Issues in selection of antiretroviral therapy in pregnancy



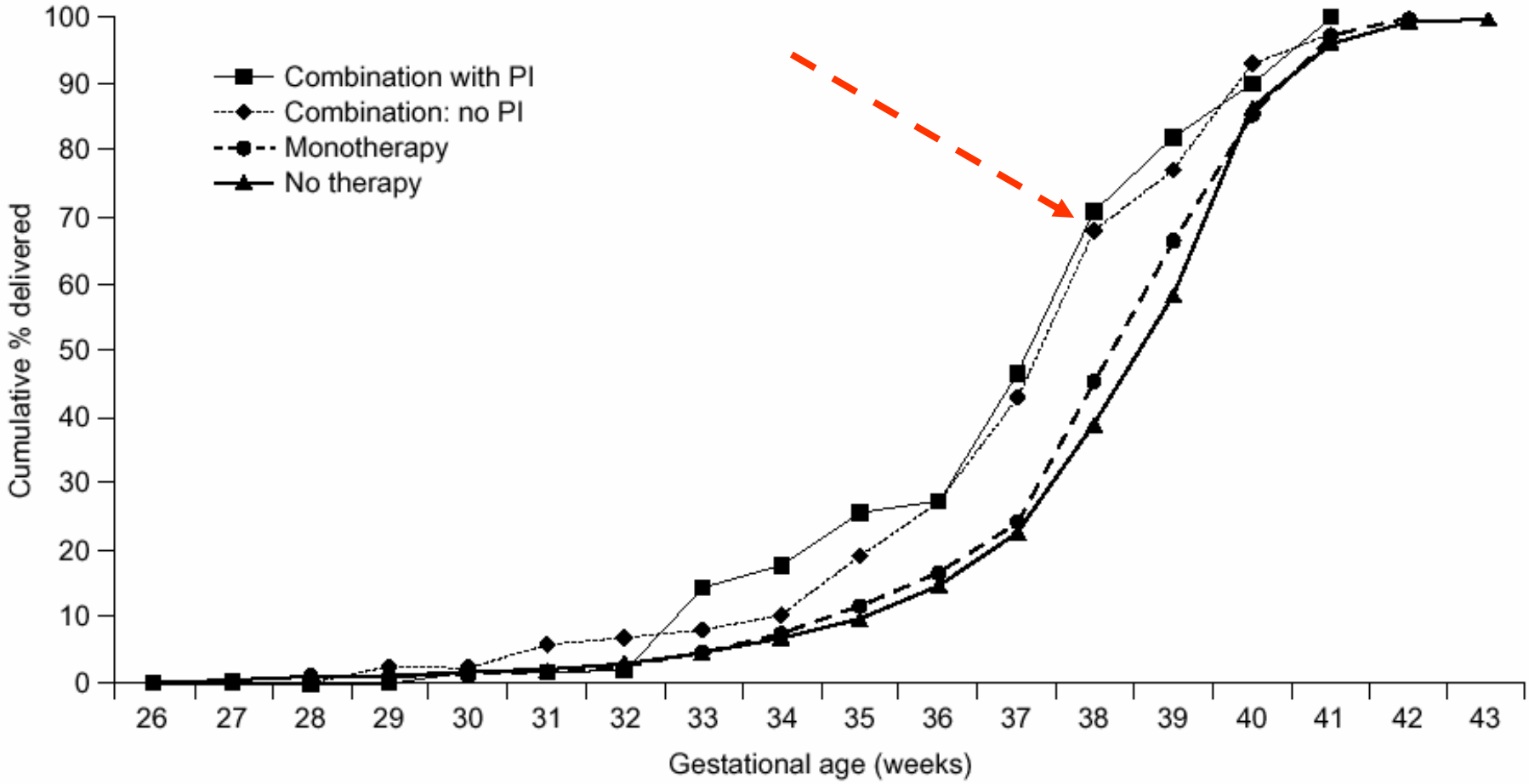


Fig. 1. Cumulative distribution of gestational age at delivery, by treatment group.

European Collaborative and Swiss Mother & Child HIV Cohort Studies
Combination antiretroviral therapy and duration of pregnancy
AIDS 2000;14:2913-2920

? Adverse effects

- More nevirapine toxicity in women
- Teratogenicity
  - no human reports
  - ? Hydroxyurea
  - CNS risk with efavirenz
  - Amprenavir (cat B3)

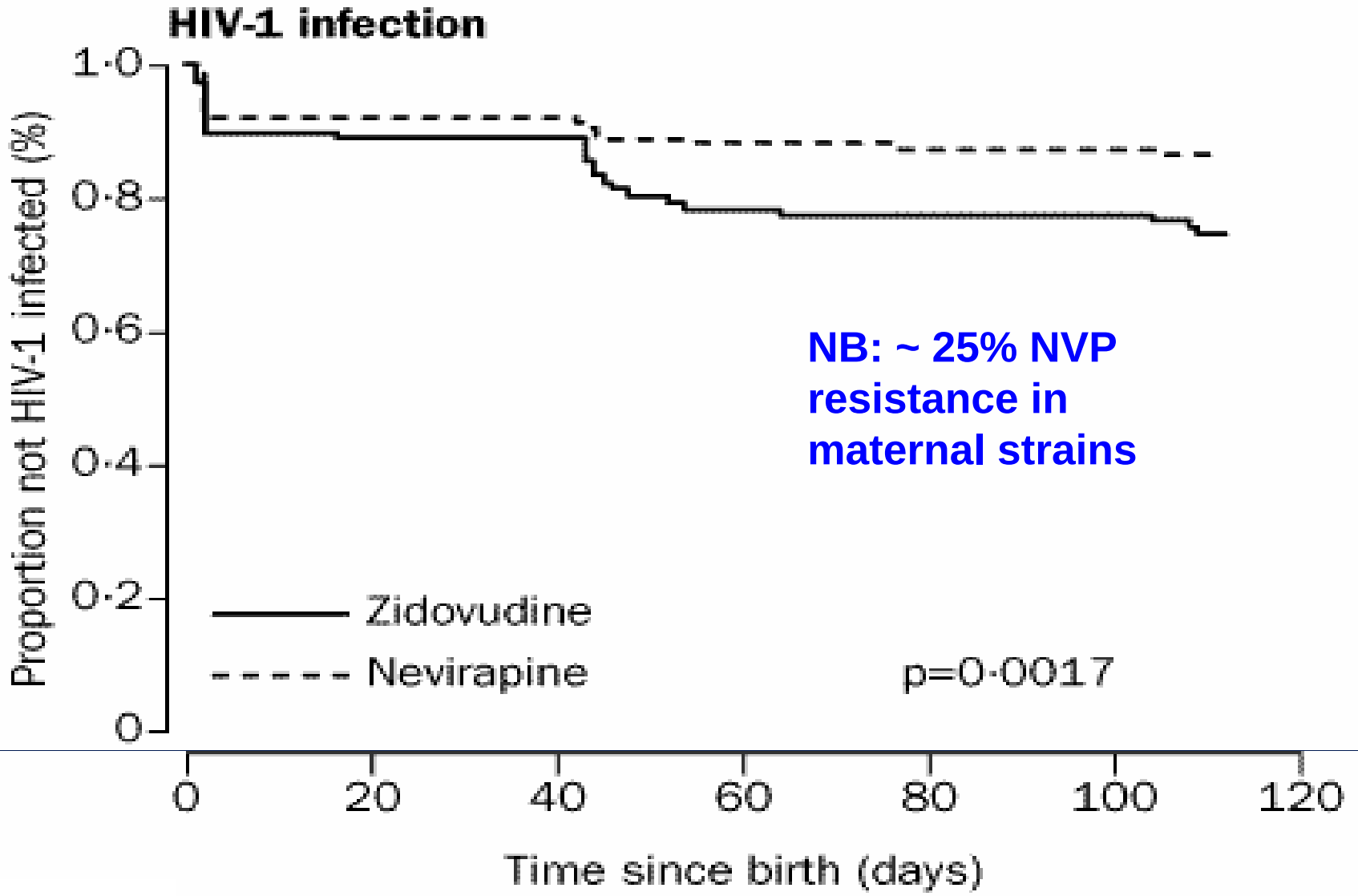
    ? Teratogenicity due to its vitamin E content
- Reports of mitochondrial toxicity in infants

  Blanche, Lancet, 1999 n = 8

  Europ. Coll. Study Gp, JAIDS, 2003 - NONE

HIVNET 012 randomised trial: *Guay LA et al. Lancet 1999;354:795-802* (N=626)

Nevirapine 200 mg po at onset labour and 2 mg/kg to babies within 72 h v. **AZT** q3h in labour and bd for 7 days to infant



NB: ~ 25% NVP resistance in maternal strains

Kaplan-Meier estimates of proportion babies free from infection

Broad Principles of Perinatal HIV Management

- Maternal antiviral therapy as indicated for non-pregnant patients
- Recommend 3 part antiviral regimen (from 2nd trimester, during labour and to newborn)
- Elective caesarean section may reduce risk, especially if VL high
- As breast feeding doubles MTCT risk – formula recommended

Baby: Postnatal Management

- What ARV?
- Safety?
- Any other medications
- What tests and when
- How long is follow-up

Management of infant after perinatal

Schedules

- AZT x 6 w
- or AZT+3TC x 6w
- or ***plus*** nevirapine

(1 (or 2?) dose(s) by day 3)

- exceptional circumstances

- Antiviral therapy
- Prevent PCP - Cotrimoxazole prophylaxis
  - till HIV -ve (usually 3 months)
  - or till 12 m
- Test for the virus

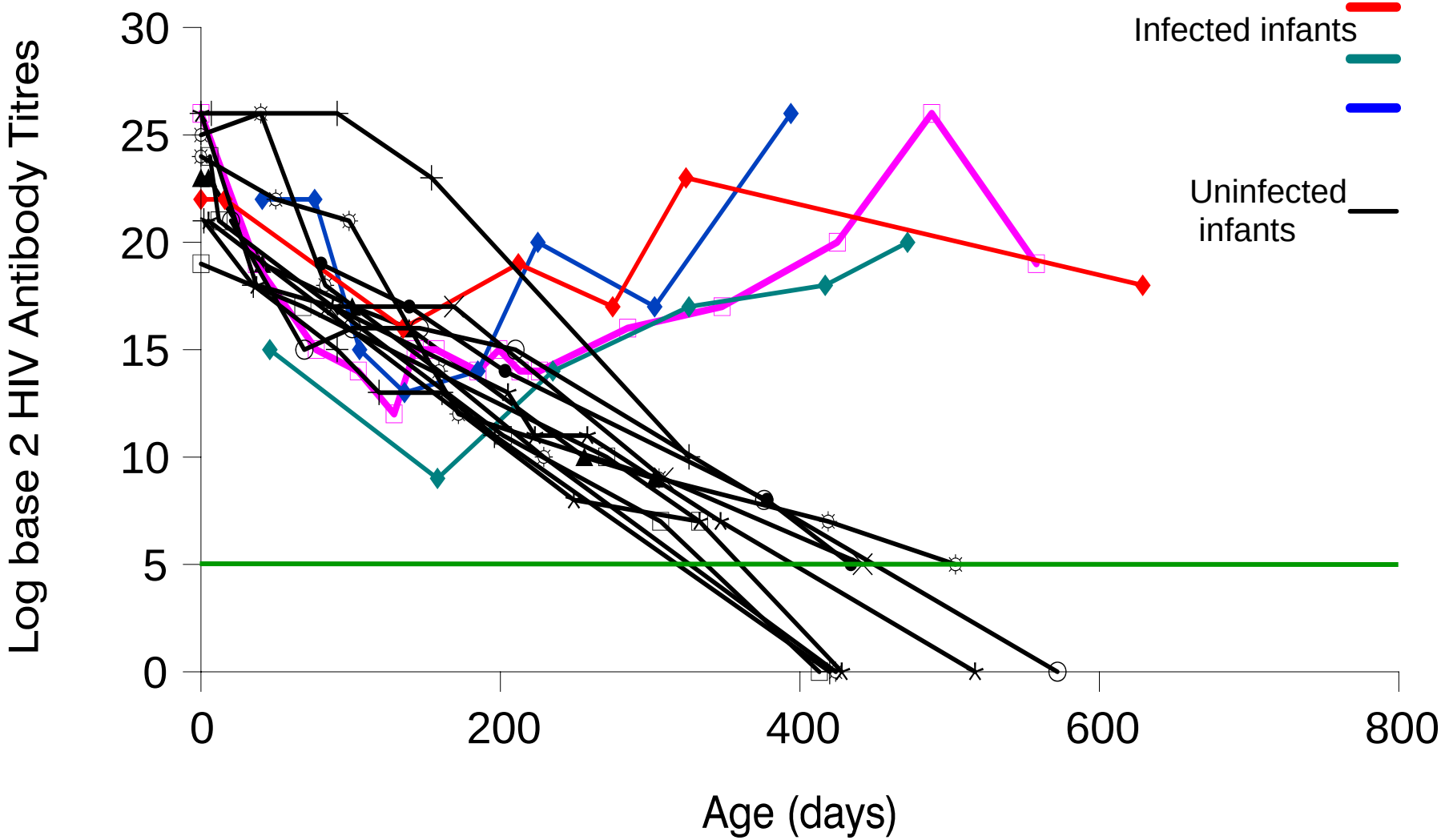
  HIV DNA PCR (RNA PCR?)

  - day 1
  - weeks 1, 6 & 12
  - 6 m

  (review at 12 and 18 months)

SERODIA HIV ANTIBODY TITRES IN INFANTS WITH PERINATAL EXPOSURE TO HIV

Modified from *Palasanthiran et al., JID 1994;170:1593-6*



Plot of log base 2 HIV antibodies in infants born to HIV seropositive mothers against age in days . Thin lines represent the uninfected infants and thick lines the infected infants.

Management of Infant….*contd*.

- Monitor growth, development, immune function
- Immunisation routine (but IPV not OPV)
- Annual review
- Support services

I HAVE AIDS
Please hug me

I can't make you sick