
*SuPS3:Recent Progress in Basic and Clinical HIV Research:Outcomes from Asia and The Pacific*

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SuPS3-03

# Issues of HIV-positive Children and Progress Made in Management: Lessons for the Asia-Pacific

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## Children with HIV need individualized attention and care

- A3-month old healthy girl has positive HIVDNA PCR
- A5-year old healthy boy is just diagnosed with HIV because his mother passed away from the disease
- A12-year old girl has poor adherence and is failing treatment

## Overview

- The pediatric HIV situation in the Asia Pacific region
- Advances in management
  - Randomized trials on when to start antiretroviral therapy and what to start with
  - Long term effects of HIV and its treatment
- Supporting children to live and cope with HIV
- Short movie clip "Who am I, why am i here" Voices of Thai children with HIV

## The Pediatric HIV situation in the Asia Pacific Region

- Children living with HIV in 2009[1]
  - Asia: 160,000;22,000 new infections
- Pediatric treatment coverage in 2009[2]
  - 36,500;44%
- TApHOD regional cohort[3]
  - >50% had severe HIV symptoms at start of ART
  - >54% had lost at least 1 parent
  - >24% loss to follow up rate at 5 years

## When to start ART

Children have bimodal HIV disease progression

Faster progression to AIDS and death during the first 1-2 years of life

Then a slower disease progression rate

## When to Start ART in Children under two years of age

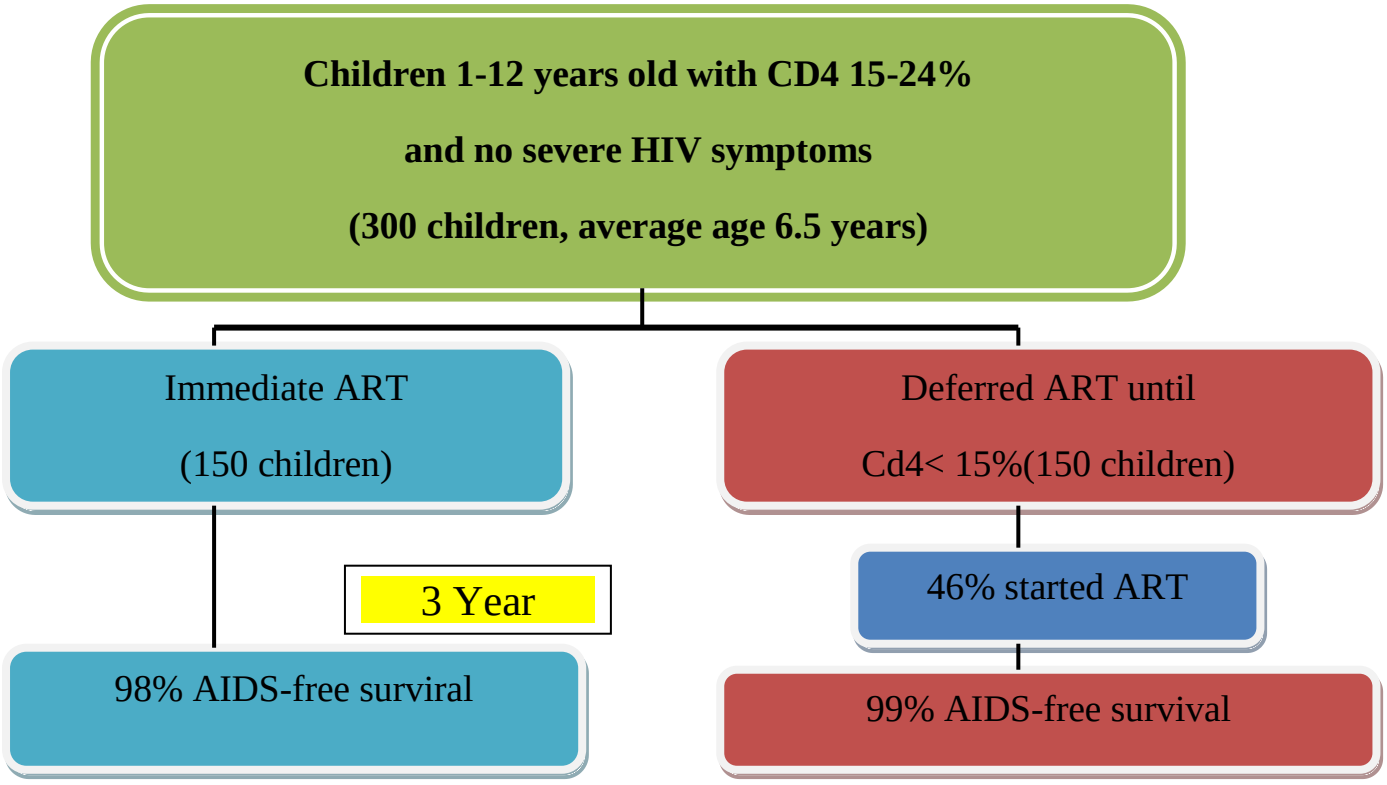
- 2010 WHO Guideline for Children
  - Treat all children <24 months of age regardless of CD4 level
    - Requires identification of HIV-exposed infants and access to HIV PCR diagnosis
- Evidence from the CHER randomized study[1]

## When to start ART in children older than 2 years

- 2010 WHO Guideline
  - Treat if advanced orsevere symptoms (WHO stages 3 or 4)
- If asymptomatic or mild symptoms
  - 1-5 year: CD4<25% or CD4 count <750 cell/mm$^3$ (strong recommendation, very low quality evidence)
  - >5 year: CD4 count<350 cells/mm$^3$

(strong recommendation, moderate quality evidence)

## Pediatric Randomized to Early vs. Deferred ART in Cambodia and Thailand (PREDICT)




*CD4 at ART start was 145, CD4 count 591 (<5 years) and 309 (≥5year)*

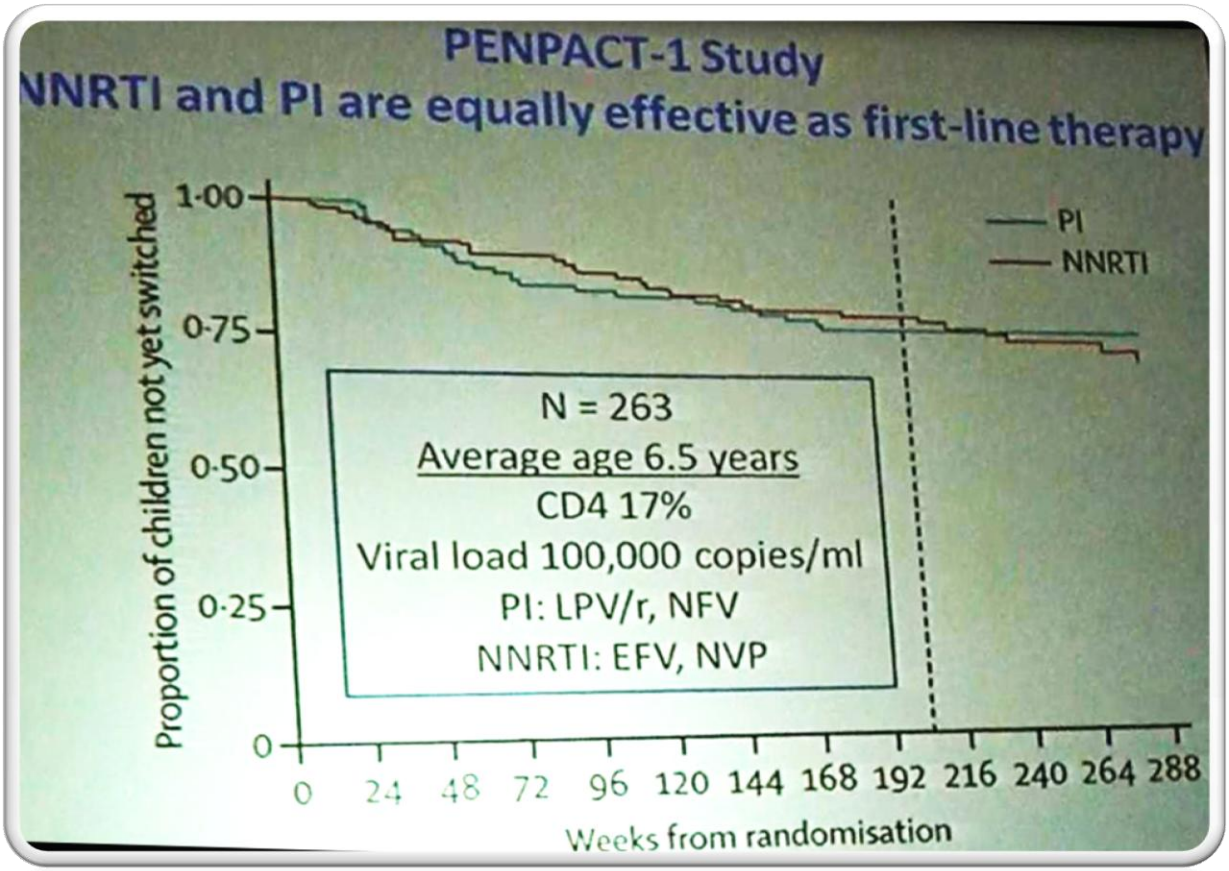
## PREDICT Study Results

Deferring ART till CD4<15% in older children who are healthy could be an option

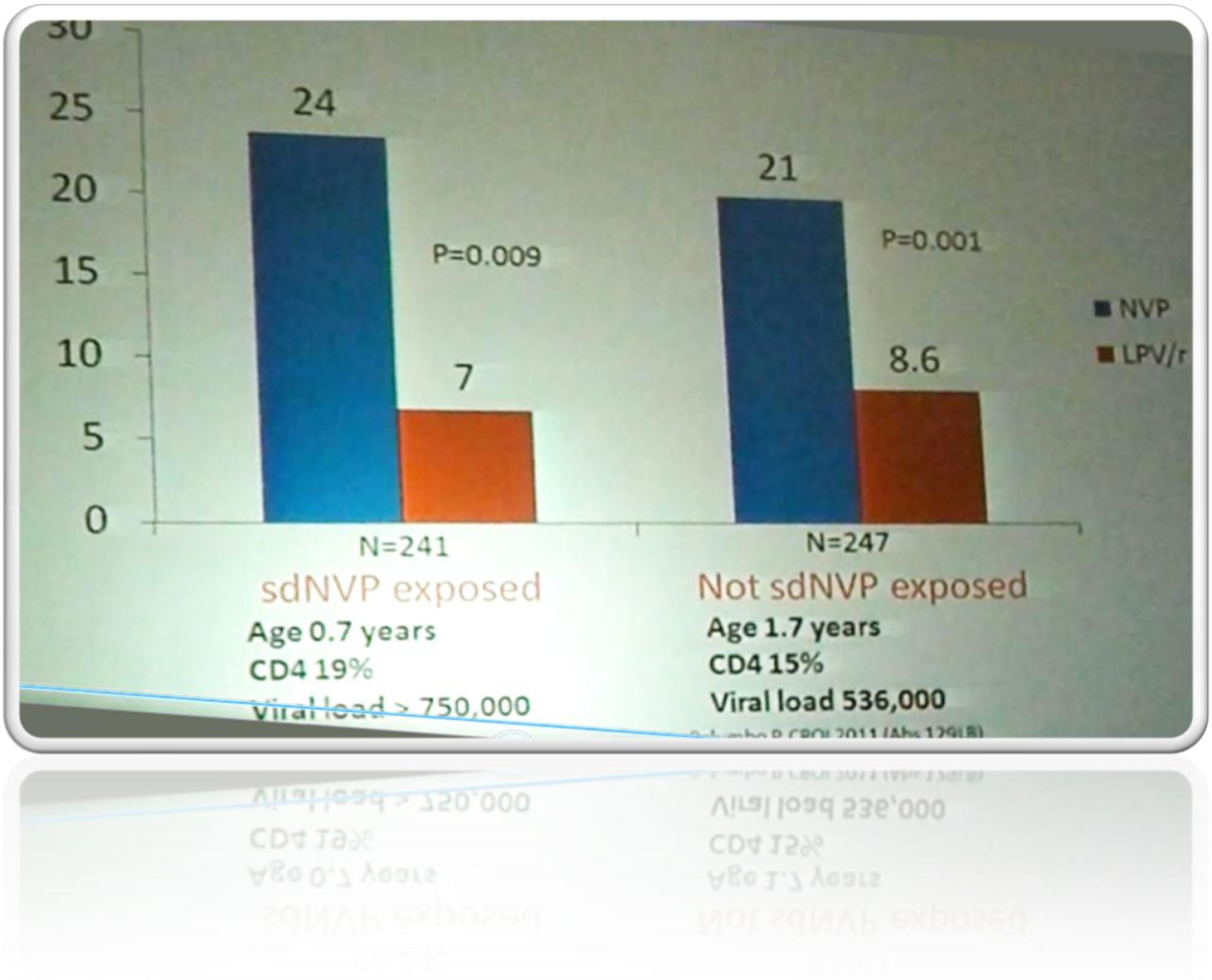
if there is close CD4 monitoring

## What ART regimen to start in children

PENPACT -1 Study  NNRTI and PI are equally effective as first- line therapy



## P1060 Cohorts 1 and 2- In young children nevirapine had higher virologic failure han lopinavir/r-based regimens regardless of sdNVP exposute




## 2010 WHO Guideline in Children

- Recommend using lopinavir/ritonavir as first-line ART for children <24 months of age exposed to sdNVP
- But young children not exposed to sdNVP may need to use lopinavir/ritonavir as well
- Limitation
- Supply of liquid lopinavir/ritonavir
- No suitable tablet formulation for infants

## Once started on lopinavir/ritonavir, do children need to continue it in the

- The NEVEREST study
  - Children can switch from lopinavir/ritonavir to nevirapine without an increase risk of virologic failure if they have
    - No NNRTI mutation before the start of ART
    - Virologic suppression while on lopinavir/ritonavir

## Complications of HIV and its Therapy

### Pediatric Treatment Failure in the Asia Pacific Region

- Thailand National Program
  - Children on second-line increased from 4% in 2005 (total N = 3409)[1] to 20% in 2010 (total N=8217)[2]
- TApHOD Regional Cohort
  - 14% are on second-line(total N = 1731)[3]
- What to do when second -line fails?
  - New drugs are needed - darunavir/r, etravirine, raltegravir, maraviroc

## Long-term Complications of HIV and its THerapy

- Neurocognitive impairment
  - Lower IQ in children who initiated ART after severe HIV[1]
- Metabolic and bone complications
  - Hyperlipidemia in 30-60% of untreated and ART-treated Thai children[2]
  - 20% of THai children had low bone mineral density[3]
- Lack of immunity to common illnesses
  - 10% with hepatitis B immunity despite infant vaccination[4]
  - Need for re-immunization following ART

## Children and Youth with HIV Need Psychosocial Support

- Poor
- stigma & discrimination
- significant stress
- Disclosure of HIV
- Poor attitude and parenting skills of caregivers
- Children have no say, adults are always right
- No way out and no one to escape to
- Delinquency and sexual problems in teenagers

## Retention in School

- Major obstacle to transitioning into the adult work force
- At the Thai Red Cross AIDS Research Centre
    - 45/333 (14%) are not enrolled in the formal school system
        - Poor ART adherence and delinquency are common
- Possible interventions
    - Promote caregivers'understanding of HIV and importance of education
    - Motivate children/youth through peer support groups
    - Guidance from education expert
    - Financial support

## Lessons for the Region

- Infants need to be diagnosed early so that they can immediately be started on ART
    - National programs need to procure lopinavir/ritonavir for young children
- Older children without advanced HIV disease may not need immediate ART if close CD4 monitoring is available

## Lessons for the Region

- Treatment failure and organ system involvement by life - long HIV and ART require monitoring and intervention
- Psychosocial support is an integral part of pediatric HIV care

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