

ART Failure in ARV experienced Children Case Study

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Background

- In February 2004, MSF-B started pediatric HIV/AIDS care in Takeo in collaboration with the hospital pediatric team
- Located and extended nearby the pediatric ward in the compound of Daunkeo RH, Takeo provincial town
- Staff: Hospital pediatric team + MSF-B staff

PEDIATRIC HIV/AIDS

YEAR	NUMBER	OPD	IPD	DEAD
2003	13	51	0	1
2004	152	1521	32	13
2005	134	2653	24	13
01-08/2006	80	2149	39	2
TOTAL	425	6374	95	29

Pediatric guideline Cambodia

Definition of ART failure

- Clinical, immunological and/or virological
- Clinical:
 - Disease progression: developing condition listed in WHO or CDC classification in same or more advanced stage after 6 Mo or more of ART
 - Growth Failure(W/ good nutrition)
 - **Development** failure(stagnation or loss of **developmental** milestones after 6 Mo or more of ART)

Pediatric guideline Cambodia

Definition of ART failure

- Immunological failure:
 - CD4% returns to baseline or falls below baseline after 6 Mo or more of ART
 - CD4% falls 5% or more confirmed by 2 repeated measurements 3 months apart
- Virological failure
 - No definition in current guideline

Pediatric guideline Cambodia

Second line Regimen

- Abacavir + Didanosine + PI
- PI:
 - Lopinavir/r
 - Nelfinavir
 - Saquinavir if BW>25kgs
- To be use with first line regimens:
 - (D4T or AZT) + 3TC + (NVP or EFV)
- If first line: AZT +3TC + ABC: seek expert advice

ART failure-ARV experienced children

- Girl 8 years old from Kampot province
- Father died
- Mother is alive and HIV positive
- Clinical background: frequent episode of oral thrush
- Treatment background:
 - Monotherapy: DDI + D4T for one year
 - Dual therapy: AZT + 3TC for two years
 - Triple therapy: Triomune 40mg 1/3 BID (not correct dose)

ART failure-ARV experienced children

- Clinical exam at first visit
 - Oral thrush, BW= 15kg, Height=108cm
 - Severe pneumonia (hospitalization)
 - CD4=18.90%, 298/mm³(April, 2004)
- Started GPOvir 30 : ½ BID + NVP 200 mg :1/2 OD in the evening (April, 2004)
 - No side effects neither drug intolerance noted

ART failure-ARV experienced children

- M6 on ART (October, 2004)
 - CD4%=23.70%,CD4 count=352/mm³
 - BW=17 kg, Height=111.5 cm
 - Good adherence
 - No OIs developed
- What do you think about this girl response to ART?

ART failure-ARV experienced children

- M12 on ART(April,2005)
 - CD4%=23.79%, CD4 count=427/mm³
 - Physical exam: Unremarkable, BW=18 kg, Height=112.5cm
 - No OIs developed besides a episode of acute tonsillitis
- What do you think about this girl response to ART?

ART failure-ARV experienced children

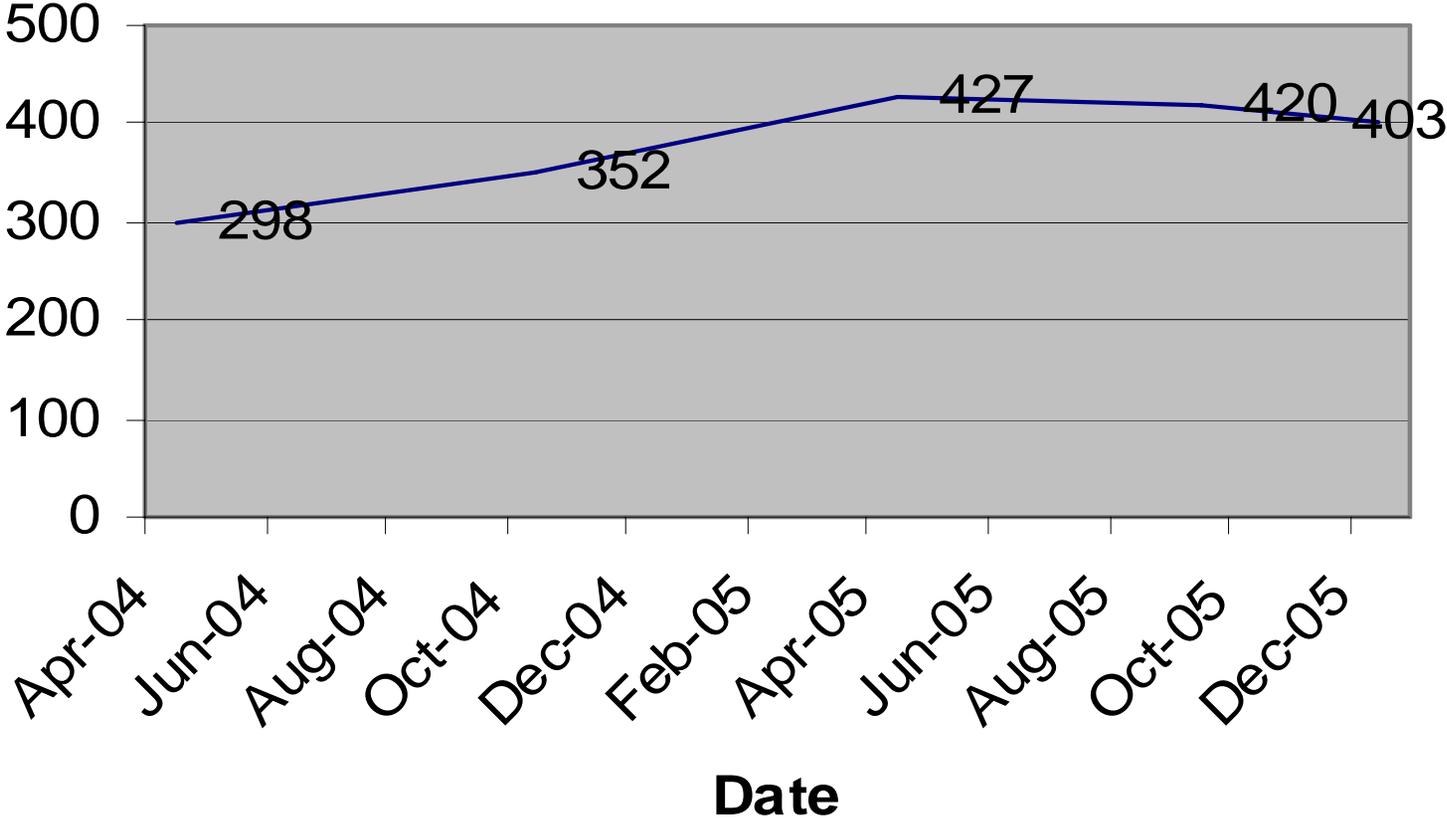
- M18 on ART(September,2005)
 - CD4%=14.63%, CD4 count=420/mm³
 - BW=18kg, Height=114Cm
 - No OIs developed
 - Developed peripheral lipodystrophy (**lipoatrophy**)
- M20 on ART (December,2005)
 - CD4%=21.12%, CD4 count=403/mm³
 - BW=18kg, Height=115 Cm
 - No OIs developed
 - Developed peripheral lipodystrophy
- What do you think about this girl response to ART?

ART failure-ARV experienced children

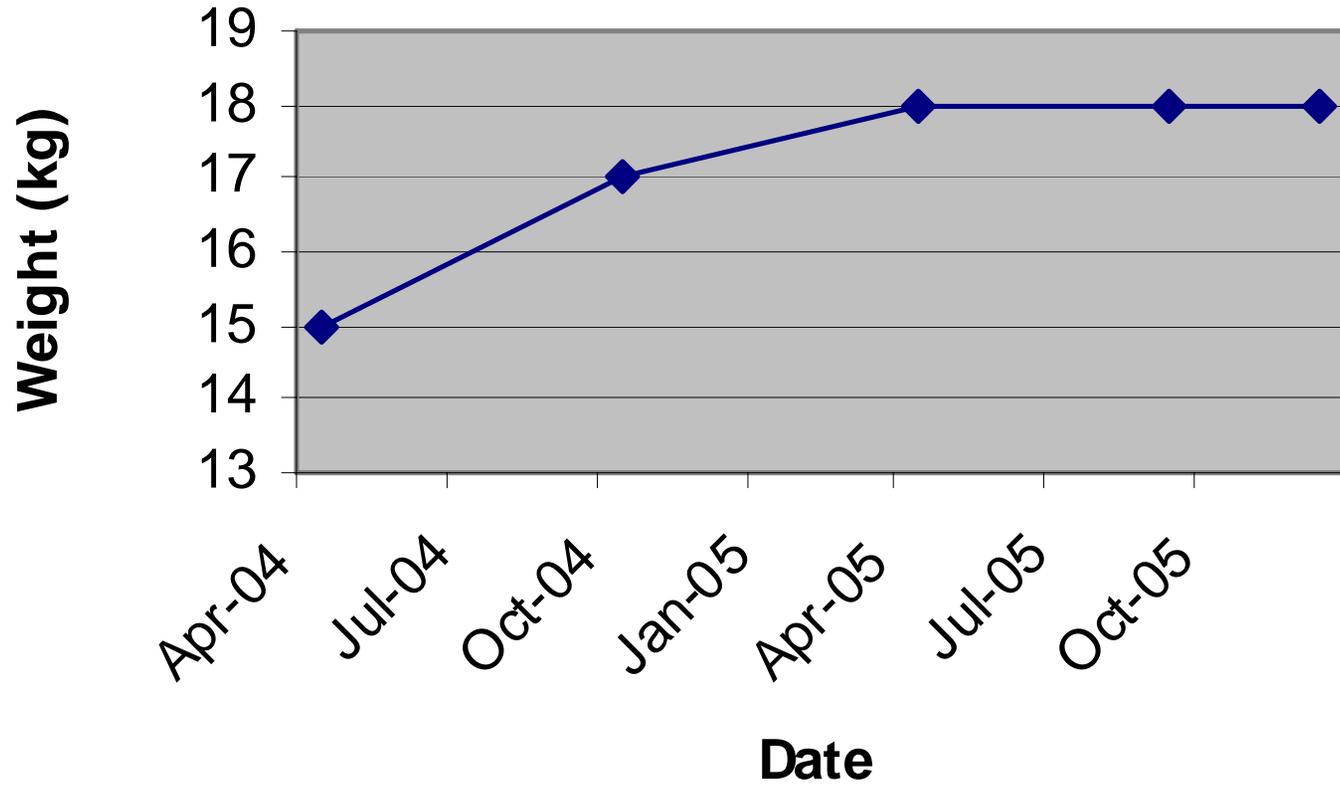
- M23 on ART (Period of evaluation viral load measurement of children on ART for more than 12 months)
 - Viral load: 188 826 copies /ml, 5.3 log (march, 2006)
 - BW=19kg, Height=116.5cm
 - No OIs developed
 - What do you think about this girl response to ART?
- What will you do? What will you prescribe?

CD4 EVOLUTION

Absolute CD4 count



Weight evolution



—◆— Weight

ART failure-ARV experienced children

- Treatment failure because:
(Advice from experts in waiting for genotypic resistance testing)
 - The child is facing viral logical failure regarding the combination of increased viral load and **the decreased CD4 result**

ART failure-ARV experienced children

- Genotypic resistance testing (ANRS)
 - Resistance mutation detected
 - NRTI: M41L, D67N, V75M, M184V, L210W, T215Y and K219N
 - NNRTI: K101E, Y181C, G190A
 - PI: L10V, I13V, G16E, E35D, M35I, R41K, H69K
 - **Interpretation according to ANRS algorithm:**
 - Resistance to AZT/D4T, 3TC/FTC, ABC, NVP/EFV, possible R to TDF, Sensitive to DDI
 - No resistance to PI, but possible R to TPV/rito
- What do you think about the result of genotyping?

ART failure-ARV experienced children

- Second line treatment (April,2006)
 - AZT 100mg: 2-0-1
 - 3TC 150mg: 1/2 -0-1/2
 - ABC syrup: 7.8ml BID
 - LPV/r syrup: 2.5ml BID
- How do you monitor treatment?
- What should you say to parents?

ART failure-ARV experienced children

- Monitoring of Treatment
 - PI baseline(Lipid, Glucose, Amylase)
 - Viral load and CD4 in 3 months
- Advice to parents:
 - See the child preferably in 15 days
 - Second line drugs counselling:
 - ABC:Hypersensitivity reaction(5% of the patients, first 6 weeks)
 - LPV/r:Administer with food(High fat meal increases absorption)
 - DDI: **administer 30 mins before or 2 hours after meals on empty stomach**

ART failure-ARV experienced children

- M3 on Second line regimen(M27 on ART)
 - Viral load: **less than** 400 copies/ml, 2.6 log (Undetectable)
 - CD4%=16.96%, CD4 count=441/mm³
 - BW=20kg, Height=118cm
 - No OIs developed
 - **Developed peripheral lipodystrophy**
- What do you think about this girl response to this regimen? and for how long?

Discussion

- Do we continue four-drugs regimen:
AZT + 3TC + ABC + LPV/r?
- Do we discontinue 3TC?
- What is the best regimen we can use
with this kid?

Thank you for your attention