Clinical and Immunological Outcomes of Pediatric ART Patients in Vietnam

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Background

- Pediatric HAART started in 2005 in VietNam
- By March 2010: 42 provinces / 58 sites / 2,059 children on ART
  June 2015: all provinces with over 5,000 children.
- National C&T guidelines revised
  - 2005, 2009, 2011, 2015
  - Toward early ARV treatment for children
- National EID guideline issued in April 2010, revised 2015

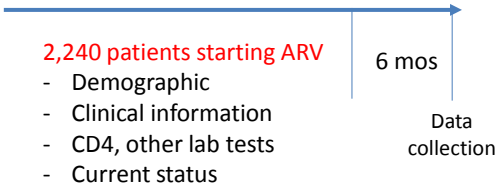
Objective

Evaluate ARV treatment outcomes of HIV-infected children at 6 and 12 months after ART initiation

Method

- Retrospective cohort study
- Data collected from patient charts
- Sites: 20 clinics in 17 provinces in different regions
- Patients : all patients which
  - Started ART 6 months prior to data collection (May–July 2011)
  - Aged ≤16 years (at time of ART initiation)
  - 2,240 patients charts abstracted

Method



Key Findings

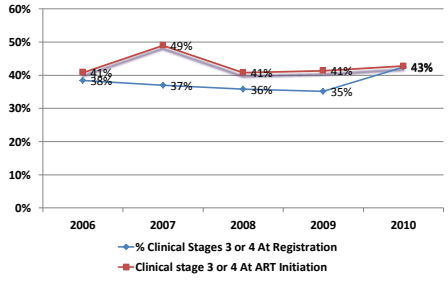
Baseline Demographic Characteristics

Sex (Male)	1,189 (52%)
Mean age (yr)	4.4 yrs
0- 1 yr	16%
1 – 3 yrs	25%
3 – 5 yrs	25%
>5 yrs	34%

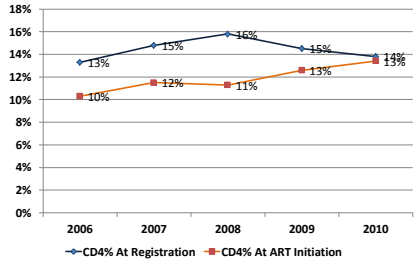
Baseline Clinical and Immunological Status

	Mean or Percentage (95% CI)
Mean CD4%	**11.9%** (10.8 – 12.9)
% Pts with clinical stages 3 or 4	**43.4%** (34.3 – 52.5)
Mean WFA Z-score	**-2.18** (-2.4 - -1.9)
Mean Hgb level (g/L)	**103.8** (99.3 – 108.4)
Mean waiting time (ART Eligibility – ART Initiation) (month)	**2.2 mos** (1.48 – 2.9)

% Clinical Stages 3 or 4 by ART stating Year



Mean CD4% level by ART Starting Year



Baseline ARV Regimens

ART Starting Year	N	d4T-containing regimens, % (n)	AZT-containing regimens, % (n)
Total	2240	68% (1532)	27% (625)
2006	278	60% (169)	29% (81)
2007	476	71% (340)	24% (115)
2008	542	86% (468)	11% (58)
2009	459	77% (357)	21% (94)
2010	485	40% (198)	57% (277)

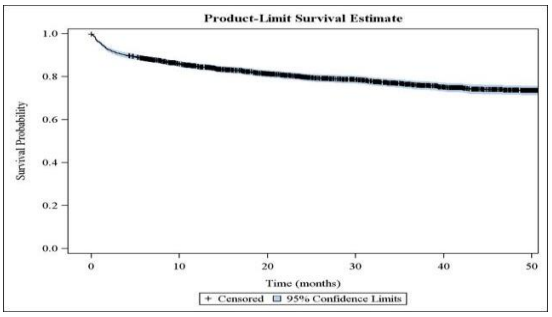
Retention at 6 Months

Outcomes	n	Percentage (95% CI)
Alive and on ART	1,985	**88.6** (84.5 – 92.7)
Died	165	**7.4** (4.9 – 9.8)
Transferred	48	**2.1** (1.2 – 3.1)
Lost to Follow-up	42	**1.9** (0.7 – 3.1)
Total	2,240	

Retention at 12 Months

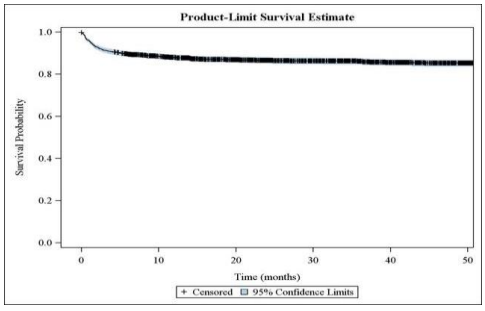
Outcomes	n	Percentage (95% CI)
Alive and on ART	1,690	**85.3** (81.2 – 89.4)
Died	147	**7.4** (5.8 – 8.9)
Transferred	89	**4.5** (2.9 – 6.1)
Lost to Followup	56	**2.8** (1.2 – 4.4)
Total	1,982	

The survival probability (Transferred-out included)



Events: Death, LTU, Transferred-out
Survivor: Alive and on ART

The survival probability (Transferred-out excluded)



Event: Death, LTFU
Survivor: Alive and on ART

Clinical and Immunological Outcomes

	Mean	(95% CI)	
CD4% at BL	**11.9**	(10.8	12.9)
CD4% at 6 months	**21.8**	(20.6	23.0)
CD4% at 12 months	**24.7**	(23.0	26.4)
Weight-for-Age z-score at BL	**-2.2**	(-2.4	-2.0)
Weight-for-Age z-score at 6 mos	**-0.8**	(-1.1	-0.6)
Weight-for-Age z-score at 12 mos	**0.0**	(-0.4	0.3)
Weight-for-Height z-score at BL	**-0.9**	(-1.2	-0.6)
Weight-for-Height z-score at 6 mos	**-0.2**	(-0.5	0.1)
Weight-for-Height z-score at 12 mos	**0.0**	(-0.4	0.3)
Hemoglobin at BL (g/L)	**103.8**	(99.3	108.4)
Hemoglobin at 6 mos	**115.5**	(112.4	118.6)
Hemoglobin at 12 mos	**119.8**	(117.5	122.0)

Clinical and Immunological Changes

	6 months Mean (95% CI)	12 months Mean (95% CI)
CD4% gain	**9.6%** (8.79 – 10.33)	**12.7%** (11.4 – 14.11)
WFH Z-score change	**0.64** (0.53-0.75)	**0.77** (0.62 – 0.92)
WFA Z-score change	**1.22** (1.06 – 1.38)	**2.01** (1.72 – 2.31)
Hemoglobin level change	**9.9** (6.7 – 13.3)	**14.0** (12.1 – 16.0)
Hgb change (w/o AZT)	**10.7**	**15.5**
Hgb change (with AZT)	**7.7**	**8.5**

Discussion

- **Over time, children get into care at similar CD4 and clinical stages.**
- **Retention: >84% (6 months)**
  >80% (12 months)
- **Mortality is high in first 6 months; then reduces quickly after that.**
- **Both clinical and immunological conditions improved with increased time on ART**

Limitations

- Observational study
- Retrospective, relying on quality of patient's documentation (completeness and reliability of patient charts)
- No information on viral loads and cognition devolopment/outcomes information

Summary

- Children registered into care at childhood
- Nearly 1/2 presented at clinical stages 3 or 4
- Children commenced ART late but responded well to treatment
- Program priorities must include:
  - Early identification of infected children
  - Linkages to care
  - Early ART initiation

Acknowledgement

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