

Clinical outcomes, immunologic function and virologic suppression among HIV infected children receiving Lopinavir/ritonavir-based second line antiretroviral therapy at National Pediatric Hospital, Phnom Penh, CAMBODIA

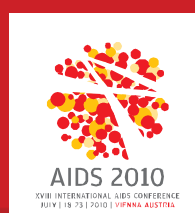
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Background

- Cambodia has scaling up a large national ART program using 1st line therapy (d4T or AZT+3TC+NVP or EFV).
- As December 2009, 37,315 people living with HIV/AIDS are receiving HAART in all sites in the country:
 - Adult: 33,677
 - Children: 3,638
- National Pediatric Hospital (NPH) is a Public Hospital.
- Provided HIV/AIDS care since 2002.
- As December 2009:
 - 1,458 children were registered
 - 1017 (69,8%) received HAART
 - Current active patients: 1125
 - ART patients: **898 (24.7% of all HIV infected children receiving ARV in the country)**
- **OBJECTIVE:** To assess the clinical out comes, level of virologic suppression and immune function with 2nd line ARV regimen.



Methods

- Medical records were reviewed at NPH by the end of December 2009 using Excel transferring to Epi-Info.
- Treatment failure with 1st line was based on clinical and immunological criteria and/or virological failure.
- Plasma Viral Load: HIV RNA Real time PCR (*2nd generation ANRS Kit*)
- Genotypic resistance analysis was done at Institute Pasteur according to ANRS algorithm (*version Sept.07*)

Results

- 84 of 898 (9.4%) patients (66.7% male) were switched to 2nd line. Median duration in the 1st line was 31 months (6-75). On switching to 2nd line median age was 11.5 years (range:2.9-18.6), median CD4 was 11.0% (IQR:5-16.5) and median VL was 5.1Log (IQR: 4.7-5.4) with +/- clinical failure.
- 59 patients were tested for HIV drug resistance before switching. 96.6% (57/59) were resistance to NVP/EFV; 89.8% to 3TC/FTC; 79.7% to d4T; 67.8% to AZT; 37.3% to ddl/ABC and 5.1% to TDF.
- Median time in the 2nd line was 18 months (1-56). 49 patients (58.3%) received recommended standard 2nd line regimen (ABC/ddI/LPV/r); 13 (15.5%) with 3TC/TDF/LPV/r. 1 patient died after receiving 31 months of second line regimen.
- Median CD4% gain on 2nd line regimen were 16.0% (IQR: 11-20) at M6 (n=72); 20.0% (IQR:16-25) at M12 (n=58); 20% (IQR:15.5-25.5) at M18 (n=40); 20.5% (IQR:18-25) at M24 (n=34); 22%(IQR:18-29)at M30 (n=30) and 22% (IQR:18-24) at M36(n=10).
- Patients who achieved undetectable VL (VL< 2.4Log) at M2 were 71.7% (n=46); 83.3% at M6(n=66); 87.5% at M12(n=56), 88.6% at M18(n=35); 94% at M24(n=34);and 90% at M36 (n=10).



Conclusion

- We report the first immunological and virological results of children on LPV/r-based 2nd line of ART in Cambodia.
- It indicated good immunological and virological responses.
- This data confirm an efficacy of LPV/r-based regimen in the National Guidelines for Pediatric ART.

- Viral load monitoring along with CD4 measurement is valuable tools for clinical follow up
- Genotyping is very useful for choosing the best regimen, particularly with ARV experienced patients.

- **Cambodia:**
 - Limited availability of 2nd line drugs
 - No 3rd line available
- **NPH:**
 - VL and genotype (available vs uncertain)
- **Consider early switch to 2nd line if virological failure:**
 - Immunological failure is associated with more mutation
 - 5.0 Log is a threshold too high to switch on virological failure alone (WHO 2006, Kh 2007).

