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Lopinavir/ritonavir-based second line antiretroviral treatment in children 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). According to NCHADS, as December 31st 2008, 3,067 children were on HAART in Cambodia, 746 of them were followed-up in Child Health Improvement Clinic (CHIC) at the National Pediatric Hospital, (NPH), with French Red Cross technical support. Fifthy-three out of 746 already switched on LPVr-based 2nd line regimen.

Objective

The aim of this study was to evaluate virological and immunological outcomes of these children on second line.

Methods

Retrospective analysis based on data and medical records from a cohort followed at CHIC to 31st December 2008 was conducted. Patients meeting the Cambodian National Guidelines for the Use of Pediatric ART for treatment failure were evaluated. First line treatment failure was confirmed based on clinical and immunological failure and/or virological failure. Plasma viral load has been assessed by HIV RNA real time PCR using 2nd generation ANRS Kit. Genotypic resistance analysis was done at Institute Pasteur according to ANRS algorithm (v.sep.07).

Results

53/746 patient (7.1%) switched to 2nd line were enrolled in this study (33.9% were females). Median age was 10.9 years (2.1–17.9). Median duration on the 1st line was 2.2 years (0.6–6.3). Median of CD4 percentage at switch was 8.0% and VL was 5.1 $\log_{10}$ (4.0–6.3) with +/- clinical failure. At switch, 38/53 patients were tested for HIV drug resistance. HIV Drug resistance analysis revealed that 97.3% (37/38) children were resistant to NVP/EFV, 78.9% to AZT/d4T/3TC/FTC, 47.3% to ABC/ddI, and 10.5% to TDF. Thirty-six of 53 patients (67.9%) received standard 2nd line regimen (ABC/ddI/LPV/r), 9 (16.9%) received 3TC/TDF/LPV/r, 4 (7.5%) were on 3TC/AZT/LPV/r, and 2 (3.7%) on 3TC/ddI/LPV/r. At evaluation, median duration on 2nd line was 1.0 years (0.1–3.3). Median CD4% gain on 2nd line regimen were 13.0% (1–31%) at M6 (n = 34); 17.0% (1–33) at M12 (n = 27); 19.5% (12–29) at M18 (n = 12); 20.0% (16–32) at M24 (n = 7); and 18.0% (17–28) at M30 (n = 3). Children who achieved undetectable VL (VL<2.4 $\log_{10}$) at M2 were 71.0% (n = 38); 85.2% at M6 (n = 34); 88% at M12 (n = 25), 77.7% at M18 (n = 9); 85.5% at M24 (n = 7) and 100% at M30 (n = 3).

Conclusion

These preliminary data on Cambodian HIV infected children on $LPV_{/r}$-based second line HAART regimen indicated good virological/immunological responses