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Oral presentation

Frequency of resistant virus and options for a second-line treatment for HIV-1 infected children under HAART in Mozambique

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Background

Resistance outcome for treated children in low resource countries is scarce. We aimed to describe the frequency and the profile of resistant virus in children treated with at least 12 months of WHO advised highly active antiretroviral therapy (HAART) in a large access program in Mozambique.

Methods

Between December 2003 and December 2006, 515 children (median age: 36.8 months) were included, 97% received a combination of d4T plus 3TC and nevirapine. HIV-1 RNA was transversally performed once using the Roche Amplicor v1.5 test. HIV-1 genotypic resistance tests were performed on available plasma samples when HIV-1 RNA was > 3 log10 copies/ml. Drug resistance was interpreted according to the 2007 French ANRS resistance algorithm.

Results

Viral load was available for 498 out of the 515 children. Among them, 134 (27%) had a viral load > 3 log10 copies/ml and genotypic resistance test could be performed for 87 children. The overall frequency of viruses showing genotypic resistance to at least 1 antiretroviral drug was 90%. The prevalence of children infected with virus with ≥ 1 major mutation conferring drug resistance to NRTIs and NNRTIs were 85% and 90%, respectively. M184V conferring resistance to lamivudine was the most common NRTI mutation. Thymidine analogs mutations (TAMs) conferring resistance to ZDV or d4T were observed in 15%. Resistance to Tenofovir, Abacavir and ddI were described in 6%, 5% and 3.5% respectively. The NRTIs Multi Drug Resistance complex (Q151M) was found in 3 cases. Unexpectidely, five children (6%) had developed extensive resistance to NNRTIs inducing resistance to the new NNRTI etravirine (TMC 125). The only factor identified by multivariate analysis as being associated with this broad spectrum resistance was the duration of treatment: aOR: 10.15 [95% CI 1.59–64.94], $p < 0.05$ for treatment for longer than 24 months. The level of viral replication at the time of genotyping was not predictive.

Conclusion

After experiencing failure with HAART containing two drugs with low genetic barrier, almost all children have at least lamivudine and NNRTI resistance. Broad spectrum resistances to second NRTIs line (ddI, ABC, TDF) concerned 6% of children. Multi drug resistance to all NRTIs was found in 3.5%. Resistance to etravirine was descibed in five children (6%).