ABSTRACT 100

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Virological outcome and frequency of drug resistance mutations in HIV-infected patients receiving first-line ARV regimen and monitored with the clinical approach in the Cameroon National ART Program

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BACKGROUND: HIV-infected patients in Cameroon initiate or switch antiretroviral treatment (ART) based on clinical evaluation and laboratory markers as viral load are rarely used. In this context, a rapid and uncontrolled emergence of resistant viruses represents a major threat. Here, we evaluated the virological outcome and drug resistance among patients with 12 and 24 months first-line ART experience.

METHODS: Between November 2009 and February 2011, adult patients attending three district public hospitals in Yaoundé, Cameroon, for their medical visit at month 12 ±2 or 24 ±2 were consecutively enrolled. Observance data were obtained using a questionnaire and patients' logs. Viral load was performed for each patient and drug resistance genotyping was realized when VL≥1,000 copies/ml. Mutations were interpreted using the ANRSv19 algorithm.

RESULTS: We enrolled 303 M12 and 290 M24 eligible patients. All were ART-naive at treatment initiation and started on a first-line regimen mainly including 3TC+d4T/AZT+NVP/EFV. 28 (9.2%) and 42 (14.5%) had VL≥1,000 copies/ml at M12 and M24, respectively, with 14 (4.6%) carrying at least one major drug resistance mutation (DRM) at M12 and 29 (10.0%) at M24. At M12, 13/14 patients with DRM were resistant to both NRTIs+NNRTIs and one patient had NNRTI mutations only, while M184V was the only observed NRTI mutation for 10/13 with NRTI resistance. At M24, 26/29 were resistant to NRTIs+NNRTIs; 3 patients had NNRTI mutations only. In contrast to M12, patients with NRTI DRMs at M24 accumulated M184 and other NRTI mutations including TAMs (13/23) and multi-NRTI mutations (2/23). We observed similar accumulation for NNRTI mutations at M24 compared with M12. As a consequence, M24 patients selected more frequently resistance to drugs that were not part of their regimen, including ddI (2/26), ABC (4/26), TDF (3/26) for NRTIs and ETR (9/29) for NNRTIs.

CONCLUSIONS: Compared with previous studies conducted in Cameroon, our results confirmed reduced virological failure and DRM among patients with 12 months ART experience and, interestingly, showed an improvement for M24 patients, with a decrease of both virological failure and the frequency of resistant viruses among failing patients. A critical finding is, however, the absence of a virological monitoring to timely identify failing patients before they accumulate DRM that can affect second-line treatment.

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