

**HIV drug resistance analysis of AIDS patients under ART in Bas-Congo Province, western Democratic Republic of Congo**

*Analyse de la pharmorésistance des ARV chez les personnes vivant avec l'infection à VIH dans la province du Bas-Congo, ouest de la RD Congo*

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**Summary**

**Background.** More than 10 years have passed in sub-Saharan Africa since HAART was introduced to the continent in order to treat AIDS patients. In some countries, even 2nd-line HAART regimens are being employed or at least considered. However, medical services are very poorly provided in Democratic Republic of Congo (DRC) partially due to a long-lasting political instability, and laboratory facilities are also extremely limited. The present study aimed to investigate the HIV drug resistance analysis among AIDS patients under ART for the first time in such a resource-limiting setting of DRC.

**Methods.** We have conducted a cross-sectional study in some hospitals in Boma City, Bas-Congo Province, and collected 60 specimens from AIDS patients after informed consent in January 2016. The study site was a capital city in early years of development of the Congo basin. Nowadays, its historical role is already lost, and human movement is restricted accordingly. They were serologically screened and DNAs were extracted from PBMCs. The half genomic region of RT gene and part of integrase gene were analyzed by nested-PCR followed by direct sequencing.

**Results.** The specimens were all positive for HIV by PA. Out of 60, 48 were successfully amplified by PCR and sequenced. The phylogenetic analyses have clarified that the predominant subtype was G (27%) followed by A, H, J, F, D, C, etc. Although typical drug resistant mutations against AZT, 3TC, and NVP were found in some specimens, their frequencies were very low compared with Ghana where ART is more extensively prevailed. Nonetheless, only two specimens appeared to possess multi-drug resistant mutations.

**Conclusion.** HAART seemed to be effective among the patients judging from the mutational analysis. Low frequencies of typical drug resistant mutations can be explained by this relatively limited human migration as well as a short time after HAART introduction. However, the co-existence of multi-drug resistant mutations is casting a very serious question how to treat AIDS patients in such an extremely resource-limiting situation.

**Keywords:** AIDS, drug resistant, HIV infection, multi-drug resistant, DR Congo

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