Development of hepatotoxicity in individuals harbouring different HIV subtypes and drug resistant variants in Cameroon

Lem Edith Abongwa
University of Bamenda, Cameroon

The advent of Antiretroviral Therapy (ART) has significantly reduced the morbidity and mortality rates in HIV infected patients. However, hepatotoxicity has been reported across all families of ART and is one of the leading causes of morbidity and mortality. Nowadays with increased ART treatment coverage, Drug Resistance-Associated Mutations are expected to increase. Furthermore, Genetic diversity remains one of the major hindrances to the eradication of HIV and has shown to influence disease progression, therapy success and vaccine design. This study aim to determine the effect of HIV-1 genetic variants and DRM on the development of hepatotoxicity, this was a longitudinal study of 81 newly diagnosed HIV-infected individuals in five HIV Treatment clinics in the Northwest Region of Cameroon.

Eighty-one antiretroviral drug-naive patients were recruited into the study and followed-up for 6 months. Blood samples were collected prior to ART initiation and 180 days (D180) later. Serum levels of aminotransferases were analysed by enzymatic methods. The HIV-1 protease and reverse transcriptase sequences were obtained using an in-house protocol and DRMs were identified using the Stanford HIVDR interpretation program, and HIV-1 subtypes by phylogeny.

Results: The mean age of the study participants was 36.5 years. Of these, 37(45.7%) patients showed hepatotoxicity at D180. There were four pure subtypes and five recombinant types with CRF02_AG (74.1%) being the predominant genetic variants. The prevalence of hepatotoxicity was highest among individuals infected with HIV-1 CRF02_AG (70.3%). The prevalence of DRM was 11.1% (9/81). Hepatotoxicity was significantly (p =0.04) higher 77.8% (7/9) among patients with resistant virus.

Conclusion: Data from this study reveals a high level of hepatotoxicity among patients with DRM probably as a result of persistent viral replication. These findings highlight the need to conduct routinely DRM surveillance among patients with hepatotoxicity in order to improve patient management and care.

Biography

Lem Edith Abongwa is a lecturer in the University of Bamenda-Cameroon. She was awarded her PhD. in Medical Microbiology in 2019 from Kenyatta University. Her PhD work focused on Hepatotoxicity, Genetic Diversity, and Drug-resistant mutation among HIV patients. Her research focus is exploring parasite strain diversity and it impact on disease progression, diagnosis, response to treatment, associated side effects, and the identification of drug resistance mutation. She has a keen interest in the identification and assessment of risk factors that expose communities to infections and possible solutions to prevention and control. She has co-authored several research papers and is also a reviewer in some peer journals. She is currently a Visiting Research Fellow in the African Center of Excellence for Genomics and Infectious Diseases (ACEGID) at Redeemer's University in Nigeria. She perceives that life is a process of conscious evolution as female researchers and mentors in science.

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