Antiretroviral drug resistance among HIV patients on antiretroviral therapy in Dar es Salaam, Tanzania

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Tanzania is among the countries with high prevalence of HIV infection. The country has implemented interventions for control and prevention, including treatment with Antiretroviral (ARV) drugs. This study aimed at determining the occurrence and risk factors of ARV drug resistance among HIV patients on treatment.

We conducted a descriptive comparative study involving cases and non-cases. Viral load testing and genotypic resistance testing was done on 150 of the patient’s samples. Epi Info, Microsoft excel, Bioedit and Mega 4 were used for analysis. Stanford ARV Resistance Database analysed ARV resistant mutations.

Marital status, education level, gender, mean viral load and ARV resistance mutations did not differ between cases and non-cases. Cases weight gain was 6% and CD4 increase of 8% compared to 20% and 35% for the non-cases, respectively (P < 0.001). Drug failure was related to late initiation of ARV therapy (p = 0.001). The subtypes were A (35%), C (35%), D (14%), BD (4%), CD (4%), CRF01_AE (4%) and CRF01_AG (4%).

The identified mutations were; PI major (4%), PI minor (33%), NRTI (71%) and NNRTI (79%). The mutations were related to the ARV therapy in use. There was no statistically significant association between subtypes and developing resistant mutations. There was no evidence that non-B viruses develop resistance by mutations at positions that are not associated with resistance in subtype B viruses.

Monitoring of the emergence of drug-resistant HIV in populations starting and using ARV therapy would be a useful approach for planning effective treatment programs in Tanzania.

Biography

Fausta Mosha (MD, Dar es Salaam University Tanzania; Msc Microbiology, Katholieke University of Leuven Belgium; Msc Epidemiology and Laboratory Management, Jomo Kenyatta University of Agriculture Kenya). She has been working for the Ministry of Health in Tanzania, initially as a National training Coordinator, then she established a Tanzania Field Epidemiology and Laboratory Training Programme where she was a Laboratory Resident Advisor. She is currently a Director for the National Health Laboratory Quality Assurance and Training Centre and also a Principle Investigator for the international cooperative agreement on Proficiency Testing for HIV Rapid Tests and Biological Safety Cabinet Certification project.