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Viral load suppression status and associated factors among patient on antiretroviral treatment in Ethiopia

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Background & Aim: With the rapid scale-up of Antiretroviral Treatment (ART) availability in Sub-Saharan Africa, the need for appropriate treatment monitoring has also increased. The World Health Organization (WHO) recommends viral load test as the preferred monitoring approach to diagnose and confirm ART failure. In Ethiopia, immunologic and clinical parameters have been used to monitor Human Immunodeficiency Virus (HIV) patients on ART. Recently the government has implemented a Viral Load (VL) testing in multiple testing centers across the regions; however, the viral suppression rate is not well studied. The aim of this study was therefore, to determine the level of viral suppression and associated factors among HIV patients on active ART.

Methods: We used routine VL (Volume licensing) program data of 8,389 adults and children, measured for patient clinical monitoring at Ethiopian Public Health Institute, HIV National Reference Laboratory. The laboratory received biological sample (Plasma, whole blood or dried blood spot) to determine the viral load from 70 health facilities referral linkage. The laboratory diagnostic result was entered in to a database built for this purpose on daily basis by trained data clerk. Duration of client on ART was at least six months at the time of viral load measurement. The main outcome variable of the study was VL measured by Abbott Real Time and Cobas Ampliprep/Cobas Taqman plat forms. Socio-demographics and baseline clinical characteristics were used as exposure variable. Multivariable regression analysis was employed to identify the associated factors with high viral load. P value less than 0.05 was used to declare the statistical significance.

Results: Of the participants 5,038 (60%) were female, 1,136 (13.6%) were children (less than 15). The overall viral load suppression (HIV RNA copies <1000 copies/ml) was found to be 86%. The VL suppression was not significantly different between the two genders. Advanced WHO clinical stage and poor adherence were significantly associated with impaired virologic suppression.

Conclusion: This study showed generally sub optimal viral suppression among patient under ART which might pose a question on the success of ART program in Ethiopia. This finding would supplement to serve as the evidence for tracking the progress towards the third of the 90-90-90 UNAIDS ambitious plan.

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