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Introduction

In resource-limited settings, where genotypic drug resistance testing is rarely performed and poor adherence is regarded as the most common reason for treatment failure, programmatic approaches to handling treatment failure are essential.

Hypothesis tested was antiretroviral therapy adherence effect on viral load outcome.

This study was aimed at determining and monitoring HIV/AIDS disease progression using viral load to provide prognostic information and evaluate all patients for viral suppression using the World Health Organization (WHO) guideline strategies.

Materials & Methods

This study was an observational longitudinal prospective study of subjects living with HIV already initiated on antiretroviral (ARV) therapy for at least six months, enrolled in health facilities across both Ondo & Ekiti State, Western Nigeria, during a 12-month observation period starting January 2017 till December 2017.

Quantitative viral load analysis was done using Polymerase Chain Reaction Technique using Roche Cobas Taqman 96 Analyzer.

All data were statistically analysed, using statistical package for the social sciences (SPSS) and statistical test of significance was performed with Chi-Square test while multiple comparisons were done using Post Hoc Bonferonni test.

Results

A total of 3920 (1005 males & 2915 females) subjects eligible for the study were recruited. Most of them are in the age range of 25 – 54 years, with a mean age of 39.35 ± 10.41 years.

3086 (78.7%) & 2363 (60.3%) of the subjects had viral suppression of <1000 RNA copies per ml and <50 RNA copies per ml respectively.

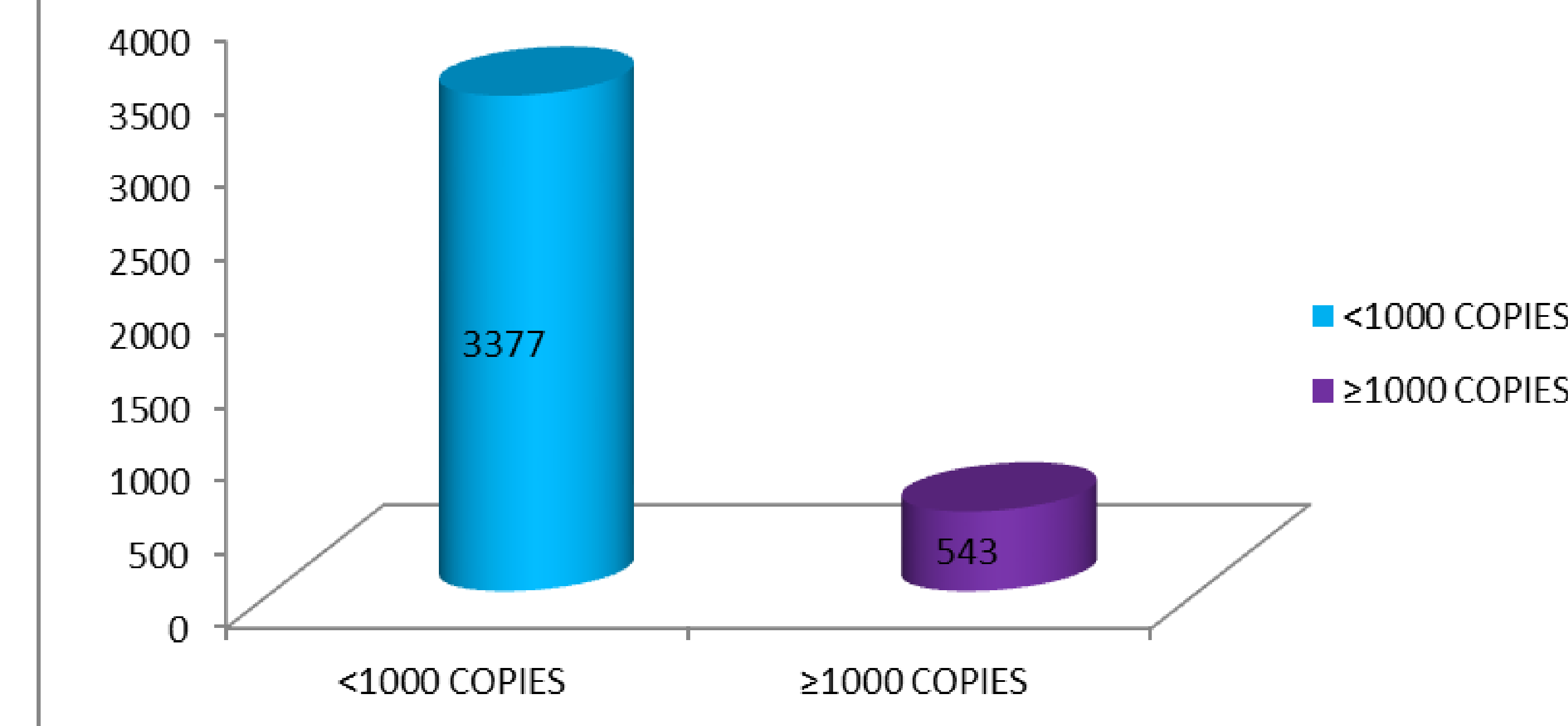
The 834 subjects went through intensive adherence counseling optimized health care worker delivery model for three months and viral load test repeated three further months after, which made 3377 (86.1%) & 2578 (65.8%) of the subjects have <1000 RNA copies per ml and <50 RNA copies per ml respectively during the period of observation.

Chi square result showed that ARV therapy adherence ($\chi^2 = 6.42$, $df = 1$, $P = 0.001$) influence the viral load outcome.

Table 1: Chi square result showing influence of current ARV therapy regimen, ARV therapy adherence & WHO clinical staging on viral load

VARIABLE	χ^2	df	Critical value	Decision
ARV therapy adherence	6.42	1	3.84	Rejected
Influence on viral load outcome				

VIRAL LOAD OUTCOME



Discussion

The outcome of this research reveals that 78.7% of the patients had suppressed viral load based on the viral load outcome using the WHO's strategy for surveillance and monitoring of HIV drug resistance in Low & Middle Income Countries (LMICs), which indicated that a viral load of <1000 RNA copies per ml should be taken as evidence of viral suppression (Bennett *et al.*, 2008).

The unsuppressed viral load went through three sessions of enhanced adherence counseling (EAC) for three months and viral load test repeated three further months after. This adherence counselling process increased the virally suppressed in this category to 86.1% based on all tests done during the period of observation.. The outcome shows that more subjects exhibited improvement, as they went from unsuppressed to suppressed status, within a short period of adequate drug adherence.

The enhanced adherence counselling is thus essential in ART and the accessibility to every unsuppressed patient is key, which include adherence assessments and documentation at every clinic visit, with emphasis on the importance of continued adherence and involvement of support systems, adverse drug reactions, among others.

Conclusions

HIV treatment enhanced adherence counselling is key to the reduction of virologic treatment failure, thus, routine monitoring of viral load will ultimately reduce treatment failure tendencies thereby helping more patients stay on first line regimen and prolong their life expectancy, indicating that the UNAIDS 90-90-90 targets are achievable in resource-constrained settings.

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