Prevalence and Predictors of Non-adherence, and Incidence of Treatment Failure among Patients on Free Highly Active Antiretroviral Therapy in Nairobi, Kenya

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ABSTRACT

Management of HIV infection consists of Highly Active Antiretroviral Therapy (HAART) which suppresses viral replication and controls opportunistic infections. HAART regimen requires near perfect adherence (≥95%); suboptimal adherence to therapy can lead to incomplete suppression of viral replication, resulting in the emergence of drug-resistant HIV virus. Knowledge about non-adherence to HAART, treatment failure and associated factors in Kenya is limited. The objective of this study was therefore to determine prevalence and factors associated with non-adherence, and incidence of ARV treatment failure among HIV+ patients receiving free HAART in Nairobi. This was a facility-based cross-sectional study undertaken in purposively selected Comprehensive Care Centers at Kenyatta National Hospital, Kenya Medical Research Institute and Riruta Health Centre. Four hundred and three HIV/AIDS outpatients aged 18 or more years on free HAART for three or more months were recruited and analysed. Using a structured questionnaire, patients were interviewed about their health beliefs, health system interaction, ARV therapy uptake and reasons for non-adherence to regimen when they attended clinic for ART or routine checkup. Additional demographic data and treatment history was extracted from patients' files. The data were analyzed for frequencies, cross-tabulations, chi-square test and significance set at $p<0.05$. Multivariate logistic regression model was used to determine independently significant factors. Overall, 18% of respondents were non-adherent to therapy by self report – CASE adherence method, 99% had belief in benefits of HAART and 83% were knowledgeable about ART. Prevalence of HIV treatment failure determined using immunological and clinical assessment was 4.7% and incidence rate, 1.45 per 100 person-years. Young age (<39.7 years), having difficulty with dosing schedule, perceived lack of social support, less than six months on ART, stating reason for missing therapy, accessing ART in a clinic within a walking distance from home and spending more than half day in clinic to refill were found to be associated with non-adherence to HAART. However, only accessing ART in a clinic within a walking distance from home (OR=2.387, $CI._{95}$=1.155-4.931; *p*=0.019), difficulty with dosing schedule (OR=2.310, $CI._{95}$=1.211-4.408, *p*=0.011) and giving reason for missing doses (OR=2.264, $CI._{95}$=1.261-4.064; *p*=0.006) predicted non-adherence to treatment by multivariate regression model. Forgetfulness was the most common reason given for missing medication. Time period on ART confounded the association between respondent's age and non-adherence to therapy, while social support and waiting time at clinic modified the effect of the variable giving reason for missing doses on non-adherence. The study found improved prevalence of adherence to HAART in Nairobi compared to previous studies and estimates in Kenya, and was comparable to rates in other developing countries. The improvement in adherence indicated that direct cost of ARV therapy together with knowledge of HAART and belief in benefits of therapy have positive impact on compliance to therapy and therefore free HAART should be made increasingly available for all eligible patients. However, further gains in adherence can be achieved through interventions employing behavioral educational strategies to increase knowledge about ART and ability to fit therapy in own lifestyle; cue-dose training to impact forgetfulness; influence social groups to optimize social and emotional support and implement strategies to reduce time taken at clinics to refill. The interventions should target patients accessing therapy from ARV clinics within walking distance from their homes and those with short experience taking HAART. Health care provider should seek to know reasons why a patient is missing therapy and address them in a sociable manner.

The study recommends research to determine whether indirect costs of ARV therapy impacts non-adherence among patients of low socioeconomic status. Further research is recommended to explain the high non-adherence rates among patients accessing therapy in clinics within walking distance to their homes. The study also recommends that treatment failure be confirmed using viral load test to avoid misdiagnosis.