Adherence to antiretroviral drugs among AIDS patients in Sagamu, Nigeria

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ABSTRACT: Adherence to drug therapy is crucial for drug efficacy and prevention of drug resistance. A cross-sectional study of 53 patients (40 receiving free medication and 13 on self purchased drugs) attending the Center for Special Studies clinic in Sagamu, Nigeria between September 1 and November 30, 2003 was carried out to determine the level of adherence and the factors associated with non adherence. Only patients who had been on ARV for at least 3 months were recruited into the study. An interview administered questionnaire was used to collect data on 7 day recall of drug use. The cost of a fixed combination of Nevirapine, zidovudine (AZT) and Epivir (3TC) is between $75-80. There were 21 males and 32 females giving a male: female ratio of 1:1.5. The mean age of respondents was 40.5 years; the majority were Christians (79.2%), married (47.2%), and of lower socio-economic status (77.3%). The mean duration of use of ARV drugs was 20.3 months while the mean CD4 count was 262cells/ul. Overall, 79.2% achieved an adherence level of 95%. This optimal adherence rate was higher in the free-medication subset compared with the self-purchased subset, although the difference was not statistically significant. [34 (85%) against 8 (61.5%); X2=3.28; P=0.069)]. The most common reason for non adherence was the inability to afford the drugs. Socio-demographic variables, number of pills/day were not significant predictors of non-adherence. Adherence to HAART treatment is high in the study population. The cost of the drugs was the most important reason given for non-adherence. Governments of resource-poor countries and the pharmaceutical industry should explore ways to subsidize the cost of ARV so that PLWHAs can have access to ARV and improve adherence.

Key Words:

Introduction

The HIV epidemic has been one of the major challenges to medicine in recent times. The high rate of new infections and subsequent mortality calls for concern. With the introduction of highly active anti-retroviral treatment in developed countries, there have been a profound improvement in the quality of life and subsequent reduction in mortality of HIV patients. However, the medicine and their management, and the politics surrounding them are enormously complex and ART remains inaccessible for the vast majority of PLWHA.[1] Nigeria initiated the National ART programme in January 2002, which was designated to provide 10,000 adults and 5,000 children with ARVs for one year. High demand from PLWHA to be included in the government programme because of cost led to more than the designated number, and 13,888 PLWHA were included on the government ART. The supply of ARVs could not be sustained for

the expected period, especially since the numbers started on drugs were more than anticipated. In some places stock-outs lasted for four months[2]. PLWHA who were unable to afford the high prices of ARVs had their drug regimen interrupted. The high cost and frequent use of laboratory tests, which must be paid by the patient, further compromise the affordability of ART.

Antiretroviral adherence is the second strongest predictor of progression to AIDS and Death, after CD4 count.[9] incomplete adherence to ART, however, is common in all groups of treated individuals. The average rate of adherence to antiretroviral is approximately 70%, despite the fact that long-term viral suppression requires near-perfect adherence.[6] The resulting virologic failure diminish the potential for long –term clinical success.[7] Hence the need for Governments of resource-poor countries and the pharmaceutical industry should explore ways to subsidize the cost of ARV so that PLWHAs can have access to ARV and improve adherence. While cost of Antiretroviral therapy is a principal factor for non adherence in poor limited resource, substance and alcohol use were found to be principal factors for non adherence in San Fransisco, United State of America.[10] Developed countries estimates of average rates of non-adherence to antiretroviral therapy range from 50% to 70%.[8] Adherence rate of rates of < 80% are associated with detectable Viremia in a majority of patients. Reasons for non- adherence are multifactorial[11] and differs from community to community. All these underscore the need for each treatment centre to look at the factors militating against adherence and proffer solutions to reduce non adherence.

Materials and Methods

The study is a cross-sectional survey among HIV positive patients attending the centre for special studies clinic sagamu between September 1 2003 and November 30, 2003. Only patients who had been on ARV for at least 3 months were recruited into the study. An interviewer administered questionnaire was used to collect data on a 7 day recall of ARV use. The cost of a fixed dose combination of Nevirapine, AZT and 3TC was between $ 75-80. The centre for special studies was providing free medications to some patients as at the time of this study.

The study was carried out at the centre for special studies, Olabisi Onabanjo Teaching Hospital Sagamu, Ogun State Nigeria. The hospital is a tertiary health facility serving all towns in Ogun state as well the adjoining parts of Lagos and Oyo states.

Statistical analysis was performed using standard statistical methods and the use of Epi info 6 software

Results

A total of 53 HIV positive patients attending the CSS clinic were enrolled into the study. There were 21 males and 32 females .The male:female ratio was 1:1.5. The mean age of the respondents was 40.5 years .The mean age for males was 43.14±12.4 years while the mean age of female was 35.39±9.2 years which was statistically significant (p = 0.0005) . The mean CD_4 cell count was 262 cells/ul. The mean duration of the use of ARV drugs was 20.3 months.

Table 1 shows the socio-demographic characteristics of the study population. The majority were Christians (79.2%), married (47.2%), and of lower socio-economic status (77.3%).

Overall, 42 (79.2%) patients achieved an optimal adherence level of ≥95%. The most common reason for non adherence was the inability to afford the drugs.

Table 2 shows factors associated with adherence to ARVs in Sagamu. Socio-demographic variables such as age, education, sex, marital status, socioeconomic status was not statistically associated with non-adherence. Also, number of pills/day was not significant predictors of non-adherence. However optimal adherence rate was higher in the free-medication subset compared with the self-purchased subset, although the difference was not statistically significant. [34 (85%) vs 8 (61.5%); X2=3.28; P=0.069)].

Table 1: Socio –Demographic Characteristics of HIV Patients.(n = 53)

CHARACTERISTIC	FREQUENCY	PERCENT
Sex		
Male	21	39.6
Female	32	60.4
Age (Yr)		
15-24	5	9.4
25-34	14	26.4
35-44	19	35.9
45-54	10	18.9
55-65	5	9.4
Religion		
Christianity	42	79.2
Islam	11	20.8
Ethnic Group		
Yoruba	43	81.1
Igbo	5	9.4
Hausa	3	5.7
Foreign nationals	2	3.8
Educational Status		
No formal education	2	3.8
Primary education	9	17.0
Secondary education	32	60.4
Post-secondary education	10	18.8
Marital Status		
Married	25	47.1
Single	10	18.9
Separated/divorce	13	24.6
widowed	5	9.4
Socio-economic status		
Lower	41	77.4
Higher	12	22.4
ARVs		
Free	40	75.5
Purchased	13	24.5

Table 2: Factors associated with adherence to ARV in Sagamu N=53

Factors	≥95% Adherent N=42	≤95% Adherent N==11	P value (Fishers exact test) 95% CI
Age			
<35	13	6	0.146
>35	29	5	
Sex			
Male	18	3	0.28
Female	24	8	
Educational Status			
<secondary	7	4	0.15
>secondary	35	7	

Factors	≥95% Adherent N=42	≤95% Adherent N==11	P value (Fishers exact test) 95% CI
Socioeconomic status Lower Higher	33 9	8 3	0.69
Number of pills/day <6 >6	20 22	6 5	0.68
Cd4 count <250 >250	18 24	4 7	0.69
Marital Status Married Not married	20 22	5 6	0.89
ARVs Free Purchased	34 8	6 5	0.069

Discussion

Although there is no universally accepted definition, medication adherence may be defined as the extent to which a patient takes a medication in the way intended by a health care provider. The terms adherence and nonadherence are meant to be nonjudgmental, statements of fact rather than expressions of blame toward the patient or provider. Nonadherence to medication, in general, is very common. Typical adherence rates for medications prescribed over long periods of time are approximately 50-75%.[12]

The finding in this study is consistent with the Operational research conducted by the Nigeria Institute of Medical Research. They found that the patient compliance was generally good, though there were occasional reports of patients sharing their drugs with other family members.[1] A study of 213 patients to investigate determinants of non-adherence to ARVs in Lagos found that 11 percent had missed their therapy during the previous week, 11 percent ran out of drugs for 4-7 days between visits, and 6 percent forgot the correct regimen. Reasons for non adherence included sharing drugs with other patients (12%), peripheral neurophathy (7%), adverse effects (7%), reducing dosage when feeling better (9%) and other problems such as fatigue, weight loss, jaundice and diarrhea.[2] In this study the main reason for non adherence to drug therapy was un affordability of medication. These findings further underscore the importance of patient counseling and follow up to prevent the widespread concern about drug resistance which is already developing.[3] Furthermore, governments of resource-poor countries and the pharmaceutical industry should explore ways to subsidize the cost of ARV so that PLWHAs can have access to ARV and improve adherence. There are conflicting reports when comparing the adherence in under developed Africa population to adherence in developed countries. The reasons for this conflicting reports is because reasons for non adherence are multifactorial. In our opinion, ARV regimen choice both on an individual level and on a population-based level should take into account many factors, including fiscal constraints, clinical effectiveness, and tolerability, as well as risk of drug resistance to optimize and prolong the use of ARVS.

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