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Abstract

The rapid scale-up of antiretroviral therapy (ART) is associated with the challenges of ensuring that HIV care delivered to clients is of the highest quality. This study was designed to evaluate the pretreatment and 12 month follow-up monitoring of clinical and laboratory profiles of HIV-infected patients at the adult HIV clinic of the University of Ilorin Teaching Hospital, in Nigeria. It was a retrospective analysis of records of 440 adult patients who were on follow-up visits for 1 or more years. Two hundred two (45.9%) were male and 238 (54.1%) were female. Weight was documented at baseline in 314 (71.4%) and at month 12 of follow-up in 258 (58.6%). Baseline World Health Organization (WHO) clinical stage was documented in 269 (61.1%). Baseline CD4 count, full blood count (FBC), creatinine (Cr), liver function tests (LFT), fasting blood sugar (FBS), and fasting serum lipids (FSL) were documented in 243 (55.6%), 260 (59.1%), 143 (32.5%), 136 (30.9%), 268 (60.9%), and 161 (36.6%), respectively. At 12th month of follow-up visit, the CD4 count, FBC, Cr, LFT, FBS, and FSL were documented in 121 (27.5%), 94 (21.4%), 59 (13.4%), 77 (17.5%), 179 (40.7%), and 95 (21.6%), respectively. This report shows that the pretreatment and the 12th-month follow-up monitoring of HIV-infected adult patients in our center was less than optimal. We recommend periodic self-assessment by care providers to monitor compliance with standards.

Keywords

HIV/AIDS, treatment monitoring, Nigeria

Introduction

Although antiretroviral therapy (ART) cannot cure HIV infection, it has been proven to extend and improve life for large numbers of people living with HIV/AIDS.¹ Because of the success of combination ART as well as improvements in the prevention and treatment of HIV complications, morbidity and mortality associated with advanced HIV infection has markedly reduced.² ART has thus transformed the perceptions of HIV/AIDS from a fatal disease to a manageable, chronic illness. This led to rapid scale-up of ART with the ultimate goal of universal access to ART for everyone who requires such therapy.³ The scale-up is, however, associated with the challenges of ensuring that the standards of HIV care delivered to the clients are high. To achieve this, the World Health Organization (WHO) has advocated the introduction of standards for quality HIV care as a tool for improving the safety and quality of HIV care.⁴ The main purpose of quality assurance (QA) is to alert everyone involved in HIV care to the problems of poor performance and to provide opportunities for improvement. Therefore, it is primarily rehabilitative rather than punitive, aiming to provide the fullest possible opportunity to display the capacities for self-expression and self-actualization innate to everyone.⁵ Many countries, including Nigeria, have since

adopted the QA tool. Consequently, in April/May 2009, a QA/QI (QA/QI) committee was set up to improve the safety and quality of HIV care in our center. A survey of 146 HIV-infected patients conducted by the QA/QI committee at our HIV clinic revealed that the standards of HIV care was lower than expected (unpublished report). This study was therefore designed to evaluate (using the national guidelines for the use of antiretroviral (ARV) drugs in Nigeria⁶) the pretreatment and 12th-month follow-up monitoring of clinical and laboratory profiles of HIV-infected patients at the adult HIV clinic of the University of Ilorin Teaching Hospital, Ilorin Nigeria.

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Table 1. Pretreatment and 12th-month Follow-Up Documentation of the Clinical and Laboratory Profiles of Patients at the HIV clinic of the University of Ilorin Teaching Hospital, Ilorin.

Variable	Pretreatment		12th-month Follow-Up Visit	
	Documented, N (%)	Not Documented, N (%)	Documented, N (%)	Not Documented, N (%)
Weight	314 (71.4%)	126 (28.6%)	258 (58.6%)	182 (41.4%)
WHO stage	269 (61.1%)	171 (38.9%)	—	—
CD4 ⁺ count	243 (55.2%)	197 (44.8%)	121 (27.5%)	319 (72.5%)
FBC ¹	260 (59.1%)	180 (40.9%)	94 (21.4%)	346 (78.6%)
Cr ²	143 (32.5%)	297 (67.5%)	59 (13.4%)	381 (86.6%)
LFT ³	136 (30.9%)	304 (69.1%)	77 (17.5%)	363 (82.5%)
FBS ⁴	268 (60.9%)	172 (39.1%)	179 (40.7%)	261 (59.3%)
FSL ⁵	161 (36.6%)	279 (63.4%)	95 (21.6%)	345 (78.4%)

Abbreviations: FBC, full blood count; Cr, creatinine; LFT, liver function tests; FBS, fasting blood sugar; FSL, fasting serum lipids; WHO, World Health Organization.

Methods

This was a retrospective analysis of hospital records of individuals (>14 years) who were HIV positive defined as 2 positive rapid tests for HIV-1 and HIV-2 using 2 different kits. Only records of those who have been regularly attending the HIV clinic for 1 or more years were included in this study. A total of 440 patients' record files were retrieved and analyzed for the study. Relevant information obtained from record files were the biosocial data, pretreatment (baseline) WHO clinical stages of HIV disease, and weight at baseline and at 12th month of follow-up. Other information obtained include CD4⁺ count, full blood count (FBC), creatinine (Cr) level in the serum, liver function tests (LFT), fasting blood sugar (FBS), and fasting serum lipids (FSL) at baseline and at month 12 of follow-up.

Data analysis was done using SPSS version 13.0. The mean $\pm$ standard deviation was calculated for the ages of the patients whereas the percentages were calculated for the categorical variables.

Results

The records of 440 patients consisting of 202 (45.9%) males and 238 (54.1%) females were analyzed. Their mean age was 36.6 ± 12.0 years, with a range of 15 to 75 years. Of the 440 patients, 306 (69.5%) were married, 95 (21.6%) were single, 28 (6.4%) were widows, and the rest were divorcee (5, 1.1%) and separated (5, 1.1%). They were predominantly traders (161, 36.6%).

Table 1 summarizes the pretreatment and 12th-month follow-up monitoring of the patients at the HIV clinic of the University of Ilorin Teaching Hospital, Ilorin.

Discussion

This report shows that using the national guidelines for the use of ARV drugs in Nigeria,⁶ the pretreatment and 12th-month follow-up monitoring of HIV-infected adult patients in our center was less than optimal. The national guidelines recommended full clinical assessment (including WHO clinical

stages) of HIV-infected patients at presentation as well as documentation of baseline CD4 counts, FBC, Cr level, LFT, FBS, and FSL with regular follow-up monitoring at specified intervals.

The clinical assessment of the patients in this study was lower than what was recommended by the national guidelines. Weight was documented at presentation in <80% of patients and it was repeated in only 58.6% at month 12 of follow-up monitoring. The WHO clinical stage of HIV disease was documented in only about 61.1% of patients at presentation. Documentation of the clinical profiles, including weight and WHO clinical stage, is very important in monitoring patients' responses to treatment. Studies have also shown that weight loss is an independent predictor of survival and disease progression in patients infected with HIV.⁷ This is even more important in our setting where facilities are not readily available for advanced laboratory testing such as viral load and resistance testing.

The laboratory evaluation of patients was also less than optimal. CD4 count (which is very important for determining the immunological status of the patients) was documented at presentation in only 55.2% and repeated at month 12 of follow-up monitoring in less than 30% of patients. CD4 count is one of the important landmarks used in the decision to commence ART. Studies have also shown that the CD4 lymphocyte count, especially when combined with the plasma viral load is a good predictor of disease progression and ART response among persons infected with HIV.⁸ Baseline FBC was done in only 59.1% and repeated during follow-up in less than 30% of them. Anemia is a common complication and a predictor of morbidity as well as mortality associated with HIV/AIDS with or without ART.⁹ Apart from anemia, other changes in hematologic parameters such as neutropenia and thrombopenia have been reported in patients living with HIV/AIDS.¹⁰ Similarly, Cr was done in a third of the patients at presentation and repeated in just about 1 out of every 10 patients at follow-up whereas LFT was also done in a third of patients at presentation and repeated in less than 20% at follow-up. Kidney and liver diseases are frequent complications in persons with HIV, causing significant morbidity and mortality.^{11,12} Therefore,

estimation of renal and liver functions in all patients, at least at baseline, is important so that those with renal or liver disease can be identified and managed appropriately. Although fasting blood sugar was documented in about 60.9% at presentation and repeated in about 40% at follow-up, FSL (which is equally important) was done in just about 36.6% at presentation and repeated in only 21.6% of patients at follow-up. Metabolic complications such as impaired glucose tolerance, diabetes mellitus, and dyslipidemia have been documented in patients infected with HIV with or without treatment using ARV drugs.¹³ It is therefore important to monitor the FBS and FSL of all HIV-infected patients, most especially those on protease inhibitors.

Several factors were responsible for the apparent noncompliance with the treatment guidelines. First, there were times when one cannot get a functioning weighing scale at the outpatient clinics. In such a situation, the attending doctor had to attend to the patients without documenting the weight. Another reason was lack of adequate manpower. For example, during the early periods of HIV care in our center, the blood sample for CD4 count was usually collected once a week. This means that all the patients seen during the previous week will queue up to have their blood sample collected by a single person. Some patients usually leave in frustration after staying for hours waiting for their blood samples to be collected. Inadequate financial resources have also led to some compromise. For example, electrolyte and Cr was not usually repeated routinely except when a patient was on tenofovir (TDF) or when there was any compelling indication such as when a patient developed overt clinical features of renal compromise. However, most of these problems are being resolved with the assistance of the Institute of Virology, Nigeria (IHVN), which has been partnering with us in strengthening the overall quality of care delivered to HIV-infected patients.

The full clinical and laboratory evaluation of patients before treatment and at specified periods during follow-up as recommended by the national guidelines is very important especially in a teaching hospital set-up like ours. Therefore, all caregivers treating HIV-infected patients should be given all the needed logistic support to ensure strict adherence to HIV standards of care as prescribed by the national guidelines. The QA/QI committee should embark on a sensitization and educational campaign to promote awareness of quality. We also recommend periodic self-assessment by care providers to monitor compliance with standards. This can be verified by the QA/QI committee. Also for alignment with internationally recognized good practice, we recommend accreditation of all health service facilities involved in HIV care in Nigeria to ensure and certify that minimum qualitative and quantitative criteria are met.

Declaration of Conflicting Interests

The author(s) declared no conflicts of interest with respect to the authorship and/or publication of this article.

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