Epidemiological and Clinical profile of HIV-infected patients attending HIV clinic at Sekou Toure Referral and Teaching Hospital in Mwanza, Tanzania: 4 years review

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Abstract

Background: Treatment and care services for HIV patients in Tanzania began 2004 with free access to anti-retroviral therapy (ART). More than 1000 HIV clinics have been established to-date. Each clinic is obliged to provide statistical and clinical feedback for further improvement.

Broad objective: The objective of this study was to establish baseline epidemiological and clinical characteristics of patients who are ART naïve attending Sekou Toure Regional and Referral HIV clinic.

Methodology: We retrospectively analyzed data for four years between 2004 and 2008 from the Sekou Toure HIV clinic database. We included all patients aged 18 and above who were eligible to commence ART. All pregnant women and patients being transferred in or out of the centre were excluded from this study. The statistical data analysis was performed using STATA program, version 14 (College Station, Texas).

Results: We analyzed 726 patients, and among them 487 (67.2%) were females. The median age was 38 (IQR= 33-44) years.. The majority of these patients (58%) were in advanced clinical HIV stages (III and IV) with low baseline CD4 cell

count (118cells/µl [IQR 46-200]. Tuberculosis was the leading opportunistic infection (OI) in over 80% of patients who had at least one OI at enrolment.
Conclusion and recommendation: This study is important, as it has established the baseline data for further research and follow-up of these patients especially with the current improvement of Care and Treatment services in the country as compared to the previous time.

Keywords: Clinical Epidemiological Profile HIV Tanzania

Introduction

HIV remains a major public health problem worldwide (1). Data shows that, since the introduction of anti-retroviral therapy (ART), mortality due to HIV/AIDS has been substantially falling in sub-Saharan Africa (SSA) countries (2,3). In Tanzania, 1.5 million people are estimated to be living with HIV; with 83,000 deaths being estimated annually (4). Despite the decrease of HIV prevalence from 7% (2003/2004) to 5.3% (2011/2012), HIV is still the leading cause of deaths among Tanzanians (5) .

Free access to ART in Tanzania began in 2004 under the HIV/AIDS Treatment and Care Plan (2003-2008). The mission of this plan was to lead and guide the health sector in the intensification, optimization and scaling up of quality HIV/ AIDS prevention. It also aimed to provide care and treatment services to facilitate the attainment of the 'three Zeros'; ZERO new infections, ZERO HIV-related deaths and ZERO stigma and discrimination (6).

There are more than 1000 HIV clinics in the country (7). Each clinic has a task to record and report the patients' management and treatment information for improvement of service provision.

In order to confirm the baseline status of the patients' enrolled in the HIV clinic, we reviewed data of four years from the commencement of these services in 2004. We aimed to describe epidemiological and clinical aspects of those patients who were enrolled and eligible to start anti retroviral therapy at Sekou Toure, Care and Treatment Clinic (CTC), a Regional Referral and Teaching Hospital in Mwanza Tanzania. There is a need to establish the baseline characteristics of the patients enrolled at the HIV clinics for further monitoring of the effectiveness of services as well as establishing a foundation for further follow-up studies. There is paucity of this information in the country and to the best of our knowledge, there are no any published reports describing the profile of these patients before they start their ARTs in the Lake Zone.

Methods

Study design

This was a retrospective study analyzing four years of data from ART naive HIV-infected patients enrolled at Sekou Toure HIV clinic. Sekou Toure is a Regional

Referral and Teaching hospital, in Mwanza Tanzania. It is also runs a HIV referral clinic with a catchment of seven Mwanza Region districts as well as neighbouring regions. Since its inception, the clinic has served 10,000 patients with 5400 patients being kept on ART. Averages of 80 HIV patients are attending daily.

Study population

The study population included all HIV-infected adult-patients (>18 years) who presented to Sekou Toure HIV clinic and who were eligible for starting ART between June 2004 and May 2008. We excluded all pregnant women as well as patients who were transferred in or out during the study period.

Epidemiological and clinical information was obtained from the HIV clinic database using a structured questionnaire. Collected variables included sex, age, height, weight, occupation, marital status, HIV clinical staging, baseline CD4 cell count, and presence of opportunistic conditions during enrolment.

Data analysis

The statistical data analysis was performed using STATA version 14 (College Station, Texas). Continuous variables were summarized by medians and inter-quartile ranges (IQRs) and categorical variables were summarized by frequency and percentage. Categorical variables were compared using Chi-square and Fisher's exact tests. Continuous variables were compared using Student's T-tests and Log Rank Sum. Odds ratios (OR) with 95% confidence intervals (CI) were calculated. Statistical significance was defined as $p<0.05$.

Ethical consideration

The permission to conduct this study and publish its findings was obtained from Sekou Toure Hospital administration and ethical committee before commencement of the study.

Results

Social-demographic profile of study participants

A total of 726 HIV-infected patients attending CTC at Sekou Toure Referral and Teaching Hospital between June 2004 and May 2008 fulfilled inclusion criteria. 238 patients (32.8%) were males and 487 (67.2%) were females. The patients' median age was 38 (IQR = 33-44). The modal age group was 35-44 years with 326 (44.9%) individuals. The majority of patients (n=396, 54%) were married or cohabiting and most of them, (n=662, 91.2%) did not have formal employment, and they were either peasants or petty traders (*table 1*).

Table 1: Socio-demographic characteristics of 726 HIV-infected patients initiating ART at Sekou Toure regional/referral hospital between 2004-2008.

Variable Name	Category	Number (%)
Sex	Male	238(32.8)
	Female	487(67.2)
Age group	18-34	240(33.0)
	35-44	326(44.9)
	45-54	127(17.5)
	55-above	33(4.5)
Marital status	Single	115(15.7)
	Married/cohabiting	396(54.0)
	Divorce/separated	96(13.1)
	Widow	126(17.2)
Occupation	Unemployed	33(4.5)
	Employed	65(8.9)
	Peasant	426(58.7)
	Petty Traders	202(27.8)

Clinical profile

The median baseline Body Mass Index (BMI) of these patients was 20.2 (IQR=18.2-21.9) with a range of 14.5-27.4. The younger individuals had lower BMI (19.5) as compared to their older counterparts (20.8) [OR 1.2 (0.9-1.4)] P= 0.05). BMI was equal among both sexes. More than half of the patients, (n=421, 58%) enrolled at the clinic during the study period were in advanced stages of AIDS (Stage III or IV), with no gender preponderance. The mean CD4 cell count was low, 118 cells/µl (IQR 46-200). Male patients had a lower baseline CD4 cell count than their female counterparts (108.5 Vs 122) cells/µl (P=0.5). Furthermore, it was found that lower CD4 cell count was more common in patients younger than 35years as compared to those older than 35years who had CD4 cell count of (145cells/µl vs. 153cells/µl, P= 0.4) (*Table 2*). The majority of our patients 636/726 (87%) were found to have at least one opportunistic infection (OI) during the enrolment; of those, 84% had Tuberculosis (TB). The occurrence of TB was significantly higher in females than in males (55.8% vs.34.2%, P=0.03).

Table 2:

Baseline clinical profile of 726 HIV-infected patients initiating ART at Sekou Toure regional/referral hospital between 2004-2008

Variable name	Category	Number (%) or Median IQR	Odds Ratio	P value
BMI	Male	20.2(18.3-21.8)	0.97 (0.82-1.16)	0.79
	Female	20.4 (18.2-22.4)		
	Age <35	19.03(18.2-21.5)	1.19 (0.99-1.42)	0.05
	Age >35	20.8(17.9-22.5)		
WHO HIV clinical stage	I & II	262 (38.8)		
	III & IV	413 (61.2)		
CD4 cell count	Male	111(43-202)	0.99(0.99-1.00)	0.70
	Female	121(48-200)		
	Age<35	114(45-201)	0.99 (0.99-1.00)	0.43
	Age >35	122(46-201)		
Opportunistic infections	Yes	636 (88)		
	No	90 (12)		

Discussion

We reviewed four years of data of HIV-infected patients who were enrolled at the HIV clinic at Sekou Toure Referral and Teaching Hospital in Mwanza, Tanzania. Our findings suggest that the overall number of patients who accessed HIV care and treatment was low as per available records, which showed that about 45,000 patients were estimated to have AIDS in Mwanza region during the period of 2004-2007 (7). We assume that most of these patients were being referred to our clinic after being diagnosed elsewhere. This number is expected to increase with time due to greater awareness increase in the community.

The number of enrolled females was significantly higher with a female to male ratio of 2:1. This is in agreement with other many reports (7,8). It may be due to a relatively higher prevalence of HIV in females in Tanzania (5), or due to more entry points that women have to CTC services, such as antenatal clinics as well as gynecological clinics. Women may also have better health-seeking behavior, as women are more likely to report early to health facilities for relatively mild symptoms than males (9).

The highest prevalence age group of HIV in Tanzania is between 15-49 years (5). These are the sexually-active individuals with multiple risk HIV factors. The modal age group of our patients was 35-44 years; hence our findings are consistent with the national average. The minor discrepancies of the ages in our study may be due to fact that we excluded those patients who were <18 years of age and we included only those patients who were eligible to start ART. Also, as this is a hospital-based study, there are higher chances that we missed some of the asymptomatic cases who did not present to hospital.

In HIV-infected patients, a higher baseline BMI has been implicated with mortality benefit after starting ART (10,11). Patients started on ART with a low BMI have been shown to have poorer nutritional, functional and immunological responses (12). In this regard, most of our patients are likely to have better outcomes, if other factors have been controlled for, as their median BMI was normal (20.2).

Advanced stages of AIDS with low baseline CD4 cell was associated with poor outcome, even after starting ART (13). More than half of the patients that presented to our clinic were in advanced stages of the disease, (HIV clinical stage 3 or 4) with a very low CD4 cell count 118cells/μl. These patients are likely to have been missed during early stages of HIV disease as most of them had attended elsewhere seeking medical attention for minor symptoms in the past. Most recent reports have indicated that expansion of HIV testing and counseling services have significantly increased the rate of early case detection at higher CD4 cell counts (6). In our setting, early case detection with subsequent early treatment initiation could have been achieved through Provider Initiated Testing and Counseling (PITC), Voluntarily Counseling and

Testing (VCT), Prevention of Mother to Child Transmission (PMTCT), TB/HIV, STI as well as Home-based Counseling and Testing (HBCT) programs. However, most of these programs started a few years after the CTCs were fully functional.

According to the WHO report, tuberculosis (TB) is still the most common opportunistic infection among HIV-infected patients and it is the leading cause of death among these patients (14), with a female predominance in TB/HIV co-infection (15). This is also consistent with our findings. In our study, 39% of patients with OIs were diagnosed and treated for TB. Several other OIs might have been missed due to diagnostic limitations in our facility.

Conclusion

Our study aimed at establishing the baseline clinical and demographic data for ART naïve patients attending CTC in northwestern part of Tanzania. Many patients were young with advanced HIV parameters, with which may lead to an inadequate response to ART. HIV programs should be strengthened to diagnose these patients early. Follow-up studies are recommended to assess the trend, progress and outcomes of these patients.

Conflict of interest

The authors have no conflict of interest to declare. All authors have read and approved the final manuscript.

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