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Causes of Admissions and Outcome in Adults Living with HIV/Aids in the Buea Regional Hospital: A 5-Year Retrospective Review

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Abstract

Background: Despite the global improvement in PLWHIV care, HIV/AIDS continues to constitute a significant proportion of hospitalisation and a leading cause of illness and death in developing countries. **Objectives**: The study aimed to identify the causes of admission, determine the in-hospital outcome, and identify factors associated with poor outcome in PLWHIV in a tertiary hospital in Cameroon (Buea Regional Hospital (BRH)). **Methods**: A 5-year retrospective study was carried out at the BRH. Files of admitted HIV patients aged 18 or older from January 2017 to December 2021 were included. Demographic, laboratory, and clinical data were extracted. Each admission was assigned a reason for admission and an outcome. Data were analysed using SPSS version 25, and multiple logistic regression analysis was used to identify factors associated with poor outcome. Statistical significance was set at a p-value <0.05, with a confidence interval at 95%. **Results**: We included 982 eligible files out of 10328, giving an admission rate of 9.5%. 92 files were excluded, giving a final sample size of 890. 22.9% were newly diagnosed HIV positive with a female predominance (57.8%). The mean age was 44 ± 12 years and the median hospital stay was 7 days. The commonest causes of admission were tuberculosis (16.1%), pneumonia (13.4%), renal failure (13.1%), diarrheal diseases (11.3%) and meningoencephalitis (10.5%) with an in-hospital mortality rate of 26.1%. Absence of cotrimoxazole prophylaxis (aOR: 2.09, CI: 1.04 - 4.22, p = 0.038) was an independent risk factor for mortality, whereas WHO clinical stage 1 - 2 (aOR: 0.27, CI: 0.10 - 0.75, p = 0.012), absence of an associated diagnosis (aOR: 0.60, CI: 0.37-0.96, p = 0.036) and absence of previous

admission (aOR: 0.55, CI: 0.30 - 0.98, p = 0.046) were found to be protective factors against mortality. WHO clinical stage 1 - 2 (aOR: 0.57, CI: 0.35 - 0.92, p = 0.023) and absence of an associated diagnosis (aOR: 0.52, CI: 0.37 - 0.73, p ≤ 0.001) were protective factors against prolonged hospital stay, whereas absence of comorbidities (aOR: 2.079, CI: 1.06 - 4.07, p = 0.033) was an independent a risk factor for prolonged hospital stay. **Conclusion**: Communicable diseases, including opportunistic infections, were the major causes of admission among PLWHIV at the BRH, and the in-hospital mortality was high. It shows that HIV remains a significant health problem in our setting. Therefore, as far as HIV is concerned, more efforts are needed to raise public awareness, improve early detection, treatment and follow-up by health care providers.

Keywords

Causes of Admission, Outcome, HIV/AIDS, Adult

1. Background

An estimated 37.7 million people were living with HIV (PLWHIV) at the end of 2020, over two-thirds of whom are in the African Region [1]. In Cameroon, about 3.7% of the adult population is HIV positive [2]. HIV continues to be a leading cause of illness and death worldwide, with about 690,000 HIV/AIDS-related deaths, of which about 440,000 (63.76%) come from Africa [3] [4]. It's known to be the leading cause of death in Cameroon [5].

The global expansion of access to anti-retroviral therapy (ART) over the past decade has led to substantial declines in HIV-related morbidity and mortality [5] [6], especially in developing countries in which HIV prevalence is highest [7]. Increased access to ART is estimated to have averted more than 4 million HIV-related deaths in developing countries between 2002 and 2012 [1]. There is no cure for HIV infection [1] [8] [9]. Nonetheless, with increasing access to effective HIV prevention, diagnosis, and treatment, including opportunistic infections (OIs), HIV infection has become a manageable chronic health condition, enabling PLWHIV to lead long and healthy lives [1] [7] [10]. The incidence of OI has then decreased, and mortality associated with HIV has improved dramatically [11] [12].

HIV care and treatment were expected to improve in Cameroon as free ART has been available since 2007 [13]. The WHO recommended the HIV test and treat (T&T) strategy since 2015 as a global approach to control the pandemic [13] [14]. The approach aims at increasing ART coverage, to attain community viral load suppression by testing everyone for HIV, placing those who test positive on ART irrespective of their CD4 count or clinical criteria, and maintaining HIV positive people on ART to achieve sustained viral load suppression [15]-[17]. The overall goal of the universal test and treat (T&T) strategy is to end the AIDS epidemic as a public health threat by 2030 [13]. With the ambition to achieve ART coverage as well as to reach the global objective of eliminating HIV by 2030, the

Cameroon Ministry of Public Health, in May 2016, implemented the WHO HIV T&T strategy in all health facilities providing HIV services within the national territory [13].

With the access and scale-up in the provision of ART in PLWHIV worldwide, the reasons for their admission and hospitalisation outcome could have changed. A systematic review conducted in 2015 has summarized data on causes of hospital admission among PLWHIV globally. AIDS-related illnesses and bacterial infections were the second most common causes of adult HIV admissions in all geographical regions and the most common causes of hospital death [7]. Studies in other regions, mostly in developed countries, have shown changes in the main causes of admission and death of PLWHIV; OIs have given way to chronic diseases and neoplasms not associated with AIDS [7] [10]. There is substantial literature available on HIV/AIDS in SSA and Cameroon, but there is limited information about the causes of hospitalisation and outcomes of PLWHIV in the South-West region. We therefore aimed at identifying the causes of admission, determining the in-hospital outcome, and identifying factors associated with poor outcome in PLWHIV in a tertiary-level hospital in Cameroon.

2. Materials and Methods

2.1. Study Design and Duration

This was a hospital-based retrospective study carried out from January to April 2023.

2.2. Study Setting

This study was conducted at the Buea Regional Hospital (BRH). The BRH is a tertiary hospital found in the Southwest Region of Cameroon. It serves as the referral hospital for the region and also as a teaching hospital for medical students. It hosts the HIV treatment center of the town. The internal medicine unit is one of the biggest units of the hospital, divided into the male and female wards with a capacity of 64 hospital beds, and a present working team of specialists (2 internists, 2 nephrologists, 1 neurologist, 1 cardiologist, 1 pneumologist, and 1 gastroenterologist), 5 general practitioners, and 40 nurses. The unit has an average patient turnover of 84 admissions per month. Patients are admitted to the unit directly after consultation by the general practitioner at the emergency department, from the HIV treatment centre or any of the specialist consultations. The admission profile is recorded in a manual file, and a patient can have multiple files (one for each admission). At discharge, the files are stored in shelves found in an administrative office based on the sex of the patient and the date of discharge. The hospital also runs a laboratory accredited by Strengthening Laboratory Management toward Accreditation (SLMTA).

2.3. Study Population and Sampling

All PLWHIV aged 18 and above admitted during the study period in the BRH

from 1st January 2017 to the 31st December 2022. A convenient sampling method intended to review all files of HIV patients admitted during that period was used.

The sampling method was convenient, and the recruitment was consecutive, aiming to review all the files of patients admitted during the period of study.

2.4. Study Procedure

1. Data collection:

The files were sorted from the archives of the various admission wards. The data were retrieved using a well-designed data collection form. Information retrieved were: demographic(age and gender), clinical (patient's diagnosis at admission and/or upon discharge, patient's past medical history, WHO clinical stage, ART status, adherence and chemoprophylaxis status on admission, previous admission during the studied period and, patient's outcome including the discharge, transfer, death and, length of stay), and para-clinical (haemoglobin level on admission, white blood cell count on admission).

The cause of admission was defined as the diagnosis that led to the patient's hospitalisation. An associated diagnosis included patients with more than one cause of admission. Prolonged hospital stay was defined for a duration of hospitalisation equal to or more than 7 days. Poor outcome was defined as patients who died during hospitalisation or who had a prolonged hospital stay.

2. Data management and analysis:

For this study, data were entered in a Microsoft Excel database and analysed using Statistical Packages for Social Sciences (SPSS) version 25 for Windows. To identify the factors associated with poor outcomes in admitted adults living with HIV in the BRH, we carried out a multivariate logistic regression analysis to look for factors associated with poor outcomes after adjusting for factors with p-value ≤ 0.2 on bivariate (chi-square test) analysis. The association of variables was judged significant for a p-value less than or equal to 5 % at a confidence interval of 95%. Continuous variables were presented as means, medians, and standard deviations while categorical variables were presented as frequency and proportion to ease organisation and comprehension of results. A Kaplan-Meier analysis was done to assess the in-hospital survival rate amongst patients with or without comorbidity.

3. Ethical considerations:

Ethical approval was obtained from the Institutional Review Board (IRB) of the Faculty of Health Sciences, the University of Buea (2022/1601-01/UB/SG/IRB/FHS). Authorisation to carry out the research was obtained from the Dean of the Faculty of Health Sciences of the University of Buea. Administrative approvals were sought from the Southwest delegation of public health and the director of the BRH. To ensure patient confidentiality, the information obtained from the files was coded in such a way that their identity would not be revealed.

3. Results

Out of the 10328 files screened, 982 files met the inclusion criterion; the propor-

tion of admissions of PLWHIV in BRH during the study period was 9.5%. 92 files were excluded, giving a final sample size of 890 files. See Figure 1 below.

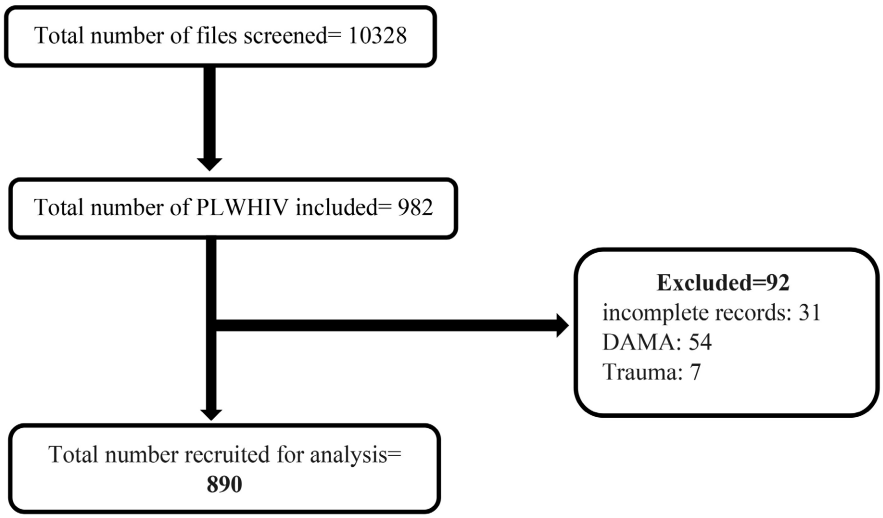


Figure 1. Recruitment flow chart.

3.1. General Characteristics of the Study Population

1. Demographic characteristics

The ages ranged from 18 to 87 years, with a mean age of 44 ± 12 years; 514 were females (57.8%) (Table 1).

Table 1. Demographic characteristics N = 890.

Demographic characteristics	Frequency (n)	Proportion (%)
Mean age (SD), 44 (±12)		/
Age category		
18 - 39	349	39.2
40 - 59	444	49.9
≥60	97	10.9
Gender, N = 890		
Male	376	42.2
Female	514	57.8
SD: standard deviation		

2. Clinical and paraclinical characteristics

Patients with advanced WHO clinical stage (stage 3 - 4) represented 81.5%, 686 (77.1%) were known HIV positive upon admission, more than half of the patients (51.9%) were not on ART or not compliant. Only 420 (61.3%) were on cotrimoxazole prophylaxis, and 366 (41%) had more than one reason for admission. The length of stay ranged from 1 to 94 days with a median length of stay of 7 days (Table 2).

Table 2. Clinical and paraclinical characteristics N = 890.

Clinical characteristics	Frequency (n)	Proportion (%)
HIV STAGE		
Stage 1 - 2	165	18.5
Stage 3 - 4	725	81.5
HIV Status		
Known	686	77.1
Newly	204	22.9
ART status		
Compliant	428	48.1
Non-compliant	244	27.4
Not on ART	218	24.5
Associated diagnosis		
Yes	366	41.1
No	524	38.7
Previous admission		
Yes	148	16.6
History of OIs or AIDS related illnesses		
Yes (≥1)	150	16.9
Number of comorbidities,		
None	673	75.6
1	160	18
≥2	57	6.4
Median Hospital stay (IQR): 7 (1-9)		
Haemoglobin (g/dl), N = 638		
≥11	141	22.1
<11	497	77.9
WBC 10^3 cells/mm3, N = 567		
4 – 10.5	314	55.4
<4	150	26.4
>10.5	103	18.2

Note: Hep B: hepatitis B, Hep C: hepatitis C OI: Opportunistic infections AIDS: Acquired Immunodeficiency syndrome IQR: Interquartile range.

3. Causes of Admissions by category during the study period

Non-communicable diseases represented 30% of all causes of admission. The leading etiologies were renal failure (13.1%), severe anemia (9.7%), cardiovascular diseases (5.1%) and malignancies (2.2%).

Tuberculosis (16.1%), Pneumonia (13.4%), Meningoencephalitis (10.5%), and

diarrheal diseases (11.3%) were found to be the leading causes of communicable diseases upon admission (Table 3).

Table 3. Causes of admission by category during the study period.

Diagnosis category	Frequency (n)	Proportion (%)
Communicable		
Tuberculosis	202	17.1
Pneumonia	168	14.4
Meningoencephalitis***	132	11.1
Candida infection	40	3.4
Diarrheal diseases	142	11.9
Malaria	70	5.9
Other communicable**	19	1.6
Non communicable		
AIDS related malignancies	28	2.3
Other malignancies	7	0.6
Severe anemia	122	10.2
Cardiovascular disease	64	5.3
Renal failure	165	13.9
Liver disease	15	1.2
Other Non-communicable	12	1.0
Total	1186	100

Note: **malaria, cellulitis, pyomyositis, septic arthritis, transverse myelitis, etc. ***aseptic, bacterial, toxoplasmosis, cryptococcosis. + Kaposi sarcoma, lymphoma, cervical cancer.

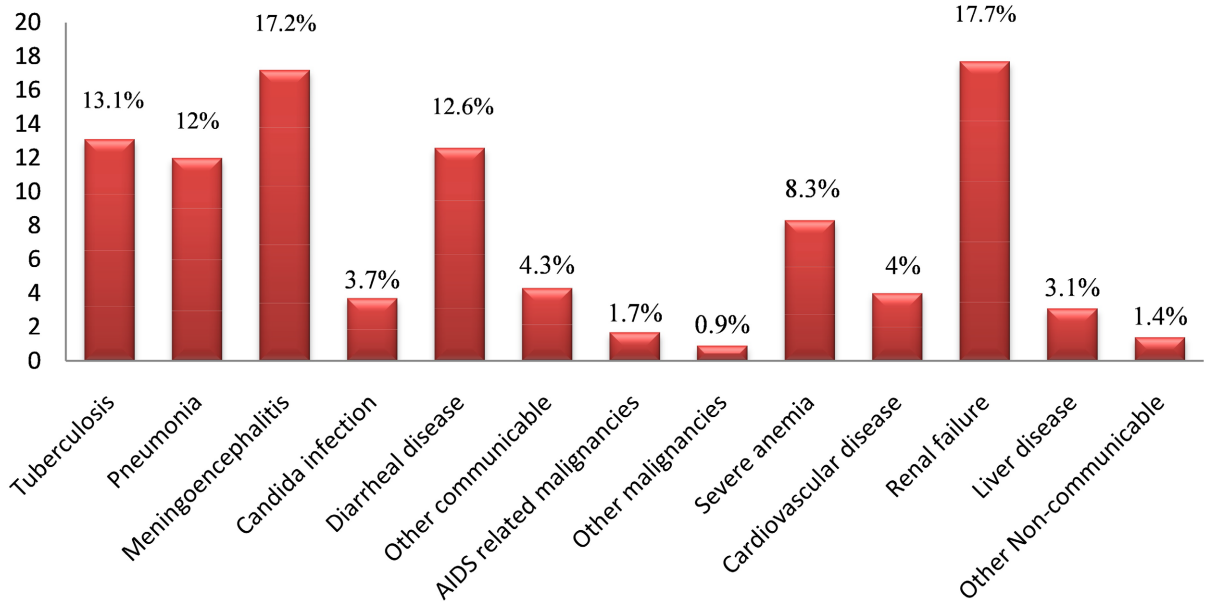
3.2. Outcome of Hospitalisation

The majority of the patients (71.9%) were discharged home. More than a quarter of patients (26.1%) died during hospitalisation. Prolonged hospital stay was found in 57.9% of patients (Table 4).

Table 4. Outcome of hospitalization.

Outcome	Frequency	Proportion (%)
Death	232	26.1
Discharged	640	71.9
Referred	18	2.0
Length of stay		
<7days	375	42.1
≥7 days	515	57.9

Renal failure was found to be the leading (17.7%) cause of death, followed by Meningoencephalitis (17.2%), tuberculosis (13.1%), diarrheal diseases (12.6%), and pneumonia (12%) (Figure 2).



Note: *Meningoencephalitis: bacterial, aseptic, toxoplasmosis, cryptococcosis.*

Figure 2. Proportion of specific cause of death by category during the study period.

3.3. Factors Associated with Poor Outcome

1. Factors associated with mortality

Patients who were classified WHO clinical stage 1-2 (aOR: 0.27, CI: 0.10 - 0.75, p = 0.012), who did not have an associated diagnosis (aOR: 0.60, CI: 0.37 - 0.96, p = 0.036), and who did not have a previous admission (aOR: 0.55, CI: 0.30 - 0.98, p = 0.046) had reduced odds of dying compared to those who were classified stage 3 - 4, who had an associated diagnosis, and who had a previous admission respectively. On the other hand, patients who were not on prophylaxis cotrimoxazole (aOR: 2.09, CI: 1.04 - 4.22, p = 0.038) had increased odds of dying compared to those who were on cotrimoxazole (Table 5).

Table 5. Independent Factors associated with mortality.

Variables	Alive n (%)	Death n (%)	p-value	aOR	95%CI (lower-upper)
Associated diagnosis					
Yes	248 (67.8)	118 (32.2)	-	Ref	-
No	410 (78.2)	114 (21.8)	0.036	0.600	0.373 - 0.967
Use of cotrimoxazole					
Yes	342 (81.4.)	78 (18.6)	-	Ref	-
No	165 (62)	101 (38)	0.038	2.095	1.040 - 4.221

Continued

WHO clinical stage					
Stage 1 - 2	145 (87.9)	20 (12.1)	0.012	0.278	0.103 - 0.752
Stage 3 - 4	513 (70.8)	212 (29.2)	-	Ref	-
Previous admission					
Yes	94 (63.5)	54 (36.5)	-	Ref	-
No	564 (76)	178 (24)	0.046	0.551	0.307 - 0.989

Note: *cotrimoxazole; aOR: adjusted odd ratio; CI: confidence interval.

2. Factors associated with prolonged hospital stay

On multivariate analysis, three factors were found to be associated with prolonged hospital stay, including associated diagnosis, WHO clinical stage, and number of comorbidities. Patients who did not have an associated diagnosis (aOR: 0.52, CI: 0.37 - 0.73, $p < 0.001$) and those classified WHO clinical stage 1 - 2 (aOR: 0.57, CI: 0.35 - 0.92, $p = 0.023$) had reduced odds of having a prolonged hospital stay compared to those who had an associated diagnosis and who were classified WHO clinical stage 3 - 4 respectively. Patients with no comorbidity (aOR: 2.079, CI: 1.06 - 4.07, $p = 0.033$) had increased odds of dying compared to those who had two or more comorbidities (Table 6).

Table 6. Independent factors associated with prolonged hospital stay.

Variables	<7 days n (%)	≥7 days n (%)	p-value	aOR	95%CI (lower-upper)
Comorbidities					
0	272 (40.4)	401 (59.6)	0.033	2.079	1.060 - 4.077
1	68 (42.5)	92 (57.5)	0.088	1.884	0.911 - 3.896
≥2	36 (63.2)	21 (36.8)	-	Ref	-
Associated diagnosis					
Yes	124 (33.9)	242 (66.1)	-	Ref	-
No	252 (48.1)	272 (51.9)	<0.001	0.521	0.370 - 0.732
WHO clinical stage					
Stage 1 - 2	100 (60.6)	65 (39.4)	0.023	0.573	0.355 - 0.926
Stage 3 - 4	276 (38)	449 (62)	-	Ref	-

Note: AOR: Adjusted odd ratio; CI: confidence interval.

3. hospital survival rate on patients with and without comorbidity

A Kaplan-Meir analysis was done to assess the in-hospital survival rate of patients with and without comorbidity, considering only patients alive at discharge. The mean survival of patients with at least 02 comorbidities was 7 days, those with less than 02 and without comorbidities were 10 days, with a significant p-value

0.004 (Breslow). Patients with at least 02 comorbidities had lower probability of being alive at discharged (Figure 3).

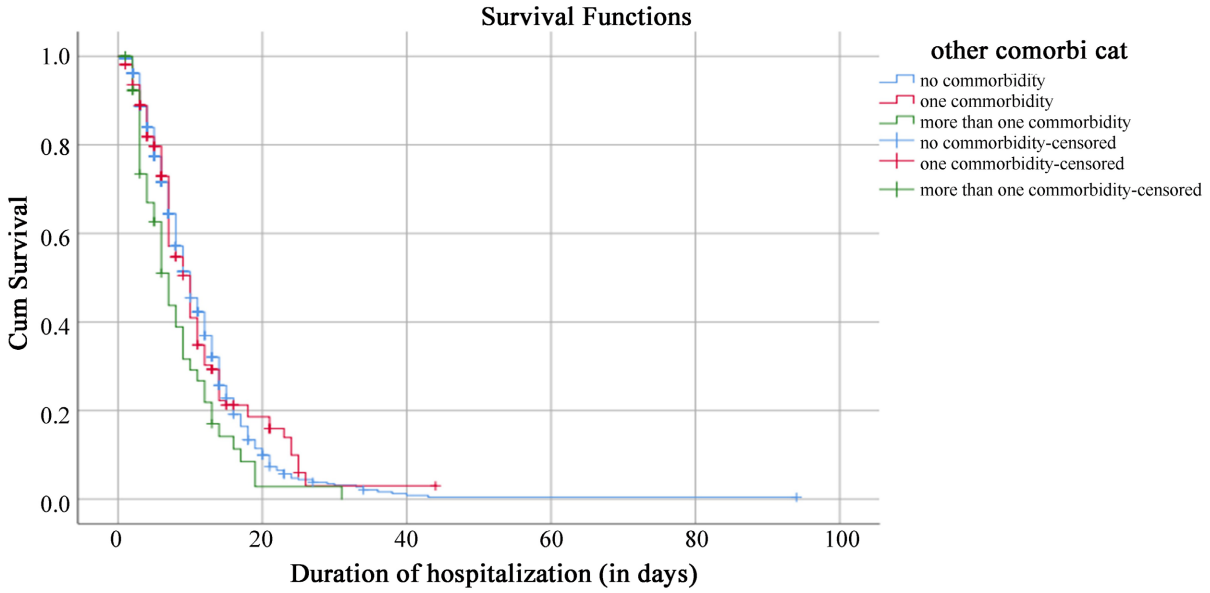


Figure 3. Kaplan-Meir curve for the comparison of in-hospital survival between patients with at least 2, 1 and without comorbidities.

4. Discussion

The hospitalisation rate of PLWHIV in the BRH was high (9.5%), and the top 5 leading causes of admission were Tuberculosis (16.1%), pneumonia (13.4%), renal failure (13.1%), diarrheal diseases (11.3%), and meningoencephalitis (10.5%). The overall proportion of communicable diseases was much higher than that of non-communicable diseases (70% versus 30%). In-hospital mortality was high (26.1%), with the predictor of mortality being the absence of cotrimoxazole prophylaxis on admission.

Communicable diseases are still the leading causes of admission in patients with HIV. This is similar to the findings obtained in most studies in SSA, where most of the hospital admissions were from Opportunistic Infections such as Tuberculosis [16]-[23]. This group of diseases are endemic in the general population, and this could explain their higher prevalence in our patients. A systematic review and meta-analysis conducted in 2015 by Ford *et al* have summarized data on causes of hospital admission among children and adults living with HIV globally where they identified that AIDS-related infections (particularly tuberculosis) and bacterial infections (particularly pneumonia) continue to be the leading causes of hospital admission in adults and children living with HIV worldwide [7]. These findings are contrary to what is reported in high-income countries, where opportunistic diseases have given way to chronic diseases and neoplasms not associated with AIDS [7] [10] [24] [25]. However, we should note here that non-communicable diseases represented 30%. This proportion has increased when compared with the

ones recorded in similar studies done a couple of years ago in Ethiopia (22.7%) [26] and Nigeria (21.3%) [16], marking the epidemiological chance of transition from communicable to non-communicable diseases in PLWHIV.

In contrast with other similar studies done in SSA [16] [27], the proportion of renal failure as a cause of admission was quite significant, ranked as the third leading cause of admission in our study. This finding could be explained by the presence of other risk factors of renal failure in those patients, the ART toxicity to the kidneys and the fact that the BRH has one of the nine national dialysis centres in Cameroon, the only one in the South-West Region, where patient with renal diseases converge from the entire region and out [28].

Most of the patients (81.5%) in this study were found to be in the advanced WHO clinical stage (stage 3 - 4), which could explain the majority of the causes of admission. This picture was also observed in similar studies conducted in Uganda (85%) [27], Ethiopia (82.2%) [26], West Africa (94%) [29], and in China (74.8%) [30]. In addition, it's known that the risk of admission is high amongst patients who were not on cotrimoxazole upon admission [22]. Close to 40% of patients with a previous diagnosis of HIV positive in our study were not on cotrimoxazole.

Out of the 890 recruited files, 640 (71.9%) patients were discharged and 18 (2%) were transferred; this proportion of transferred patients was similar to a study done by Long *et al.* [21] but lower compared to the one done by Mishore *et al.* (4%) [26]. This could be explained by the fact that the BRH has a national dialysis centre, there are a good number of specialists in various fields, and pathology can be done in situ; all of this reduces the chances of referral. 232 patients died during hospitalisation, especially within the first week (60.8%), giving a mortality rate of 26.1%. This mortality was almost similar to a previous study conducted in Cameroon by Luma et *al.* (23.6%) [31] but lower in similar studies in SSA, where it ranged from 28.7% to 40.6% [16] [17] [20] [23] [29] [32] [33]. In a worldwide systematic review and meta-analysis, in-hospital mortality among adults living with HIV was 20% overall, but highest in the African region with 31% [7]. Our finding was much higher than the one in similar studies conducted in higher-income countries such as France (5%), China (8.7%), Spain (13.5%), and South Africa 17% [21] [30] [34] [35]. The high mortality observed in this study is probably because of the advanced disease and HIV stage at presentation, the presence of opportunistic infections, and the lack of resources for care [25] [29] [33] [36]. Other considerations could include late diagnosis, late presentation to HIV care, and low ART uptake, which are related to poor outcomes [37]-[41]. In our study, 77.1% of admitted patients had a known diagnosis of HIV, and more than half of the patients (51.9%) were not on ART or not compliant. A significant proportion of patients get diagnosed HIV positive during admission or die with a recent diagnosis [29] [42].

As far as the duration of hospitalisation is concerned, we found that the majority (57.9%) had a prolonged hospital stay (≥ 7 days). This finding was in accordance with Mishore *et al.* [26]. Non-adherence to the ART regimen was found to

increase the risk and duration of hospitalisation in PLWHIV [43] [44]. Less than half (48.1%) of patients in this study said to be adherent to ART upon admission, which could explain our finding.

In this study, renal failure was found to be the leading (17.7%) cause of death in contrast to what was reported in previous studies done in Cameroon (3.4%), Uganda (4%), and Nigeria (7.4%) [16] [27] [31]. As said earlier, our finding could be explained by the presence of other risk factors for renal failure, the ART toxicity to the kidney and the fact that the BRH has the only dialysis centre in the South-West Region of Cameroon.

Meningoencephalitis (including bacterial, aseptic, toxoplasmosis, and cryptococcosis) had a significant proportion (17.2%) of deaths. This proportion was almost similar to a study conducted 2 years ago in Nigeria (17.8%) [16], but lower than the one conducted 4 years ago in Cameroon by Luma *et al.* (23.4%) [31]. Our finding shows a considerable improvement in mortality due to meningoencephalitis in our setting, and could be explained by the efficacy of the T&T strategy recommended by WHO in 2015 and implemented in Cameroon in December 2016 [13] [14] [45].

Although TB (13.1%) came in the third position in our study compared to other SSA studies where it was known to be the leading cause of mortality in PLWHIV [16] [17] [20] [23] [29] [39] [46] [47], TB is still a preventable leading cause of death in PLWHIV in our setting. TB is endemic in Cameroon, and HIV infection is the strongest risk factor for developing tuberculosis [23] [48]. Furthermore, the association between HIV and TB leads to increased mortality, reinfection, and the emergence of resistant strains, as well as greater difficulties in diagnosing sputum-negative cases and extra-pulmonary TB [49].

On multivariate analysis (table XIV), not being on cotrimoxazole prophylaxis was found to be an independent predictor of mortality, with the majority (60.8%) of deaths being during the first week of admission. These were previously described in similar studies [16] [23] [26] [31] [33] [50]. These findings can be explained by the fact that patients coming at a late stage of the disease with poor performance status upon admission died a few days after admission due to the severity of their ailment [16]. Also, Cotrimoxazole prophylaxis significantly reduces mortality in HIV-infected adults on ART [50] [51]. On the other hand, our study showed that not having an associated diagnosis, being at WHO clinical stage 1-2, and not being previously admitted were found to be protective factors against death. Multiple diagnoses predict a poor outcome in HIV/AIDS [31] [52]. Previous studies also reported that being at WHO clinical stage 3-4 was a risk factor for in-hospital mortality [23] [30]. Patients with no comorbidity on admission were more likely to stay longer in the hospital than those with at least 02 comorbidities. This was probably because those patients with at least 2 comorbidities died much earlier. We saw in this study that patients who had at least two comorbidities had a lower probability of being alive at discharge.

5. Limitations

This was a retrospective review of patient records and thus prone to missing data such as white blood cell count, Haemoglobin level, CD4 count and viral load. Therefore, we did not finally assess other important paraclinical predictors of poor outcomes, such as viral load or CD4 counts, because they were absent. We also had some selection biases: given that our study was done in a single hospital, patients admitted to the hospital may not be representative of all admitted patients in the community and may not also be a true reflection of in-hospital mortality in the general population.

6. Conclusion

We, therefore, conclude at the end of this study that communicable diseases (including Opportunistic Infections) are still the major causes of admission among PLWHIV at the BRH, but non-communicable diseases are on the rise. The top 5 leading causes of admission were tuberculosis, pneumonia, renal failure, diarrheal disease, and meningoencephalitis in decreasing order of frequency. The in-hospital mortality was high, as more than one out of four patients died. Patients who were not on Cotrimoxazole prophylaxis upon admission were two times more at risk of dying during hospitalisation than those who were on Cotrimoxazole. We hope that our findings will help guide health policies aimed at reducing the admission rate and improving in-hospital outcomes in HIV/AIDS.

Consent for Publication

Written and informed consent was obtained for the study.

Acknowledgements

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Conflicts of Interest

The authors declare no conflict of interest.

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List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
BRH	Buea Regional Hospital
CDC	Centres for Disease Control
HIV	Human Immunodeficiency Virus
OI	Opportunistic Infection
PLWHIV	People Living With HIV
SSA	Sub-Saharan Africa
T&T	Test and treat
TB	Tuberculosis
WHO	World Health Organisation