

Table 2. Clinical Characteristics of Patients in the Cancer Clinic

Characteristic	HIV	
	HIV Infected (n=25) No. (%)	Uninfected (n=100) No. (%)
Year of Cancer Diagnosis		
1990-2010	6 (27.3)	19 (19)
2011-2013	4 (18.2)	17 (17)
2014-2016	5 (22.7)	32 (32)
2017-2019	7 (31.9)	32 (32)
Type of Cancer		
Non Hodgkin Lymphoma	6 (24)	32 (32)
Lymphoma (Unspecified)	5 (20)	11 (11)
Hodgkin Lymphoma	3 (12)	4 (4)
Prostate	1 (4)	17 (17)
Leukemia	1 (4)	13 (13)
Breast	0 (0)	13 (13)
Kaposi Sarcoma	4 (16)	0 (0)
Renal	0 (0)	4 (4)
Bladder	0 (0)	2 (2)
Lung	1 (4)	0 (0)
Colon/Bowel/Intestine	1 (4)	0 (0)
Anal	1 (4)	0 (0)
Other	*2 (8)	**4 (4)
Setting of Diagnosis		
Patient concerned & sought medical attention	10 (40)	65 (65)
Doctor concerned & tested patient	5 (20)	9 (9)
Routine testing	2 (8)	10 (10)
Accidental Finding	8 (32)	16 (16)
Participated in Cancer Treatment Clinical Trial		
3 (12)	6 (6)	
Previous Cancer Diagnosis in Family		
18 (72)	74 (74)	

*Castleman's Disease(2)

**Esophagus(1), skin(1), multiple myeloma(1), Adenoid Cystic Carcinoma(1)

Table 3. Components of Barriers Experienced Patients in the Cancer Clinic

Barrier	HIV Infected (n=25) No. of patients with barrier (%)		HIV Uninfected (n=100) No. of patients with barrier (%)		p-value
	No. (%)	No. (%)	No. (%)	No. (%)	
PSYCHOLOGICAL/EMOTIONAL					
Self Esteem	Feeling powerless	3 (12)	5 (5)	0.20	0.15
	Feeling like giving up	4 (16)	9 (9)	0.29	
	Not confident in talking about symptoms	3 (12)	5 (5)	0.20	
Denial	Feeling like patient's health is not important	0 (0)	7 (7)	0.34	0.34
	Too embarrassed	5 (20)	5 (5)	0.03	
Fear	Too scared	5 (20)	8 (8)	0.13	0.07
	Worried about wasting the doctor's time	1 (4)	2 (2)	0.49	
	*Worried what the doctor will find	*5 (20.8)	20 (20)	>0.9999	
ENABLING RESOURCES					
Conflicting Needs	Other things to worry about	5 (20)	19 (19)	>0.9999	0.65
	Taking care of someone else	5 (20)	16 (16)	0.76	
	Don't have time	4 (16)	14 (14)	0.76	
Insufficient Social Support	Worried about talking to friends/family	5 (20)	5 (5)	>0.9999	0.01
	No one to discuss health concerns with	2 (8)	10 (10)	0.10	
Inadequate Information	Feeling alone in your health diagnosis	8 (32)	6 (6)	0.00	0.37
	Lack of knowledge about your health	6 (24)	11 (11)	0.11	
	Lack of knowledge about available resources	3 (12)	*10 (10)	0.72	
EXTERNAL ENVIRONMENT					
Insurance Money Transport	Worried about insurance rates	6 (24)	18 (18)	0.57	0.22
	Lack of funds for medical care	6 (24)	12 (12)	0.20	
	No transportation	5 (20)	10 (10)	0.18	
Assessing appointment or same provider	Difficulty making an appointment	4 (16)	10 (10)	0.48	0.77
	Changes in medical providers	2 (8)	8 (8)	>0.9999	
OUTCOME					
Dissatisfied with provider	Difficulty talking to the doctor	1 (4)	1 (1)	0.36	0.09
	Negative attitude towards doctor	2 (8)	6 (6)	0.66	
	Don't feel like the doctor cares	0 (0)	8 (8)	0.36	
	Uncomfortable with the doctor	3 (12)	7 (7)	0.05	
	Feel judged by the doctor	1 (4)	4 (4)	>0.9999	

Table 4. Experiences of Being Given Cancer and HIV Diagnoses in HIV+ Population

Experience	Selected Patient Quotes	No. HIV+ Patients (%), n=23
1. Both diagnoses delivered similarly (positive)	A. "[They did the] best they could have done. Both were unbelievable but I had to accept it."	6 (26.1%)
	B. "I was told about both [diagnoses at the same conversation, it was a rather optimistic conversation."	
2. Both diagnoses delivered similarly (negative)	A. "Both were nonchalant [and] matter of fact. [I] felt like they were saying, 'you're a number...deal with it'"	2 (7.7%)
	B. "[Both cancer and HIV Diagnoses] were told to me over the phone. Both shocking and unprofessional."	
3. Diagnoses delivered similarly (neutral)	A. "[The diagnoses were delivered] the same. [They] just let me know, not negative or condescending."	12 (51.2%)
	B. "Both [diagnoses were told] by the doctor. They were the same."	
4. Cancer Diagnosis Felt Better	A. "HIV [diagnosis was given] via phone. Cancer [diagnosis was given] by a doctor at the office. The call about HIV was very impersonal, whereas [the] cancer [diagnosis by] the doctor was very caring."	2 (7.7%)
5. HIV Diagnosis Felt Better	A. "For the cancer diagnosis, [they] said I didn't have it and then they said I did. What the [heck], what do you mean I have it?! [The HIV diagnosis] was excellent. Anything I needed, they did."	1 (4.3%)

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328. Kaposi Sarcoma in High Population ART Utilization Setting: An Observational Study in Botswana

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Background. Despite population antiretroviral treatment (ART) utilization exceeding UNAIDS 90-90-90 targets, Kaposi sarcoma (KS) remains one of the most prevalent malignancies in Botswana. We sought to examine the characteristics and outcomes of KS in the context of high ART utilization.

Methods. Consenting patients at one of four oncology centers for KS treatment were enrolled prospectively (October 2010 to March 2019) and followed quarterly for 5 years. Survival was estimated using Kaplan-Meier estimator and predictors assessed with Cox proportional hazards modeling.

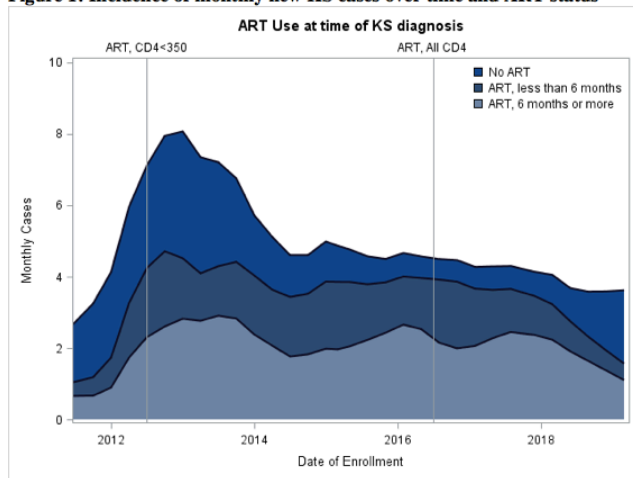
Results. A total of 408 KS patients were enrolled and of those, 396 (97%) were HIV-positive and included in analyses. Median age at diagnosis was 40 years (IQR: 34.1, 46.7) and 247 patients (62%) were male. The median CD4 cell count at the time of KS diagnosis was 253 cells/mL (IQR: 134, 364) and 279 (73%) were receiving ART at the time of KS diagnosis. Among those on ART, the median duration of ART prior to KS diagnosis was 11.9 months (IQR: 2.7, 46.7). The proportion receiving ART prior to KS increased during the surveillance period from 58% to 80% ($P < 0.001$). Of the 248 (62.6%) patients with recent measurement, 91% had HIV-1 RNA < 1000 copies/mL. Five-year overall survival was 73% (95% CI 68-78%). In multivariable analysis, Female sex and higher income were associated with improved survival, but not age or CD4 cell count. The duration of ART was significantly associated with survival ($P = 0.02$), with improved survival for individuals on ART < 6 months compared with longer ART (HR 0.54; 95% CI 0.29-0.98). The incidence of KS cases declined by nearly 50%, but has remained relatively stable since 2015.

Conclusion. Survival rates in this cohort were comparable to other KS cohorts. While KS treatment initially declined with ART expansion, KS remains a significant disease burden in Botswana with 80% of cases occurring among individuals receiving ART.

Table 1: Patient Characteristics at time of KS diagnosis

	N= 396
Median Age (IQR)	40.1 (34.1, 46.7)
Male	247 (62%)
Female	149 (38%)
ECOG Performance Status	
Good	290 (73%)
Poor	106 (27%)
Never smoker	227 (57%)
Past/present tobacco use	169 (43%)
Employed	118 (33%)
Other/student	53 (14%)
Unemployed	190 (52%)
Unknown	8 (2%)
Personal income < \$50/month	215 (54%)
Personal income > \$50/month	180 (46%)
Self-described ethnicity	
Tswana	264 (67%)
Kalanga	61 (15%)
San	25 (6%)
Other	46 (12%)
ACTG Stage	
1 (poor risk)	307 (78%)
0 (good risk)	54 (14%)
Unknown	35 (8%)
On ART	279 (73%)
ART <6 months	109 (39%)
ART >6 months	170 (61%)
Not on ART	108 (31%)
Median duration in months on ART (IQR)	11.9 (2.7, 46.7)
ART Regimen	
TDF/FTC/EFV	161 (42%)
ZDV/3TC/EFV	46 (12%)
TDF/FTC/DTF	32 (8%)
PI-based	10 (3%)
Other or Unknown	30 (8%)
Median CD4 count in cells/ μ L (IQR)	253 (134, 364)
CD4 <350 cells/ μ L	223 (56%)
CD4 >350 cells/ μ L	86 (22%)
Unknown	87 (22%)
HIV VL <1000 copies/ml	225 (57%)
HIV VL >1000 copies/ml	23 (6%)
Unknown	148 (37%)

Figure 1: Incidence of monthly new KS cases over time and ART status



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329. Health Disparities Among HIV-Positive Patients with Kaposi's Sarcoma

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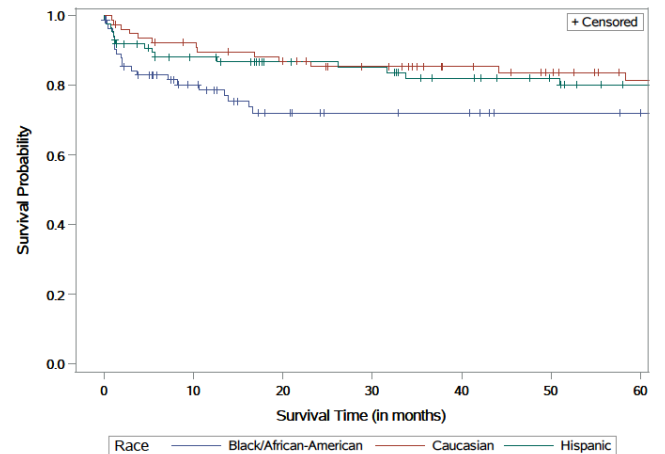
Background. Kaposi's sarcoma (KS) is an AIDS-related condition that is mediated by HHV-8. Although incidence and mortality of KS in the United States have decreased over time since the advent of HAART, there may be disparities in mortality based on geographic location and race/ethnicity, particularly African-American men in the South.

Methods. A retrospective electronic medical record review was conducted using integrated inpatient and outpatient data in EPIC from PHHS. We included all

individuals with a diagnosis of HIV and Kaposi's sarcoma between January 1, 2009 and December 31, 2018 based on ICD-9/10 codes. We collected demographic information, HIV history, variables related to HIV and KS diagnosis, treatment and outcomes data for each patient. We calculated hazard ratios using Cox proportional hazards modeling.

Results. We identified 252 patients with KS. 95% of patients were male, and the majority were MSM (men who have sex with men; 77% of all patients). 35% of patients were Hispanic, 34% were African-American and 31% were Caucasian. Over half (56%) of patients were funded through Ryan White or were uninsured. The median CD4 count and viral load at the time of cancer diagnosis were 44 and 73,450, respectively. 24% of patients were confirmed to have died by the end of the study time frame. However, due to loss to follow-up, 35% of the cohort had an unknown vital status at the time of the final chart review. Variables most strongly associated with mortality were >2 hospitalizations in the first 6 months of cancer diagnosis (aHR=4.93, $P = 0.0003$), IV drug use (aHR=3.61, $P = 0.0009$), and T1 stage of KS (aHR= 2.13, $P = 0.0264$). African American patients had lower survival than Caucasian or Hispanic patients, with a 5-year survival of 69%, 81% and 80% respectively, although this did not reach statistical significance (aHR 1.77, $P = 0.1396$).

Conclusion. We describe a large cohort of patients with HIV and HHV-8-related disease, who are predominantly of minority race/ethnicity, uninsured, and have advanced HIV disease. Factors associated with mortality include Black/African-American ethnicity, number of hospitalizations, IV drug use and T1 stage of KS. Our mortality analysis is limited due to high lost to follow-up rates, so we suspect overall mortality in our cohort is higher than currently reported.



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330. Survival of HIV-Positive Patients with Hemophagocytic Lymphohistiocytosis

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Background. Hemophagocytic lymphohistiocytosis (HLH) is a rare but life-threatening disorder resulting from dysregulated cytokine production. The diagnosis of HLH requires five of eight abnormalities: fever, splenomegaly, bicytopenia, hypertriglyceridemia and/or hypofibrinogenemia, hyperferritinemia, hemophagocytosis on biopsy, low or absent NK cell activity, or elevated soluble CD25. The link between Human Immunodeficiency Virus (HIV) and HLH is incompletely understood; we sought to further define the characteristics and outcomes of this patient population.

Methods. We performed a retrospective study on HLH patients with and without concurrent HIV infection treated at our institution from January 2008 to July 2018. At the time of HLH diagnosis, we extracted data on the HIV status and associated malignancies. The primary outcome was overall survival from time of diagnosis of HLH in patients with HIV vs. those without HIV. Secondary analysis was performed with survival by HIV and malignancy status. Survival was analyzed by Kaplan-Meier curves with hazard ratios calculated using the log-rank test with significance set at $P \leq 0.05$.

Results. Forty-three patients were included; 11 had HIV at the time of diagnosis of HLH and all met criteria for AIDS at time of inclusion. Patients with HIV who were diagnosed with HLH had similar survival compared with patients without HIV (Hazard ratio for death (HR) 0.87 [95% confidence interval (CI) 0.37-2.904]). All patients with malignancy had a worse survival (HR for death 3.648 [95% CI 1.804-9.169] $P = 0.0009$), regardless of HIV status. HLH in HIV patients with malignancy resulted in a trend toward worse survival (HR = 3.86 95% CI 1.09-22.60, $P = 0.0578$) compared with those without malignancy, although the limited number of patients prohibits a definitive conclusion. In HIV-negative patients, the presence of malignancy is associated with worse survival (HR 3.56 [95% CI 1.475-10.11] $P = 0.0063$).

Conclusion. In this retrospective, single-institution review of HLH patients, HIV was not associated with worse overall survival compared with patients without HIV. The presence of malignancy resulted in worse survival in the overall population. Further investigation is needed to optimize the care of these patients.