

Prevalence And Characteristics Of Human Immunodeficiency Virus Associated Kaposi Sarcoma

J Mbuagbaw, C Pishoh, L Mbuagbaw, C Bengondo, B Kegoum, G Bengono, M Nkam, K Ngu

Citation

J Mbuagbaw, C Pishoh, L Mbuagbaw, C Bengondo, B Kegoum, G Bengono, M Nkam, K Ngu. *Prevalence And Characteristics Of Human Immunodeficiency Virus Associated Kaposi Sarcoma*. The Internet Journal of Oncology. 2007 Volume 5 Number 2.

Abstract

Skin manifestations are frequently associated with the Human Immunodeficiency Virus (HIV) infection. Kaposi's Sarcoma (KS) is one of the most common cancers seen in people with HIV, and is an AIDS defining illness. The incidence of HIV associated Kaposi's Sarcoma has decreased since the advent of antiretroviral drugs in developed countries. This is not the case with Cameroon people present with generalized and aggressive KS. This study reviews the characteristics and prevalence of KS and the impact of antiretroviral drugs in a treatment center in Yaoundé, Cameroon.

The prevalence of KS among HIV infected patients was found to be 10.0%. Both sexes were equally affected unlike in endemic KS which is more common in males. Most patients had generalized disease, and death occurred within six months of diagnosis. These cases were associated with low CD4 cell count, anemia and low platelet counts. Patients with less extensive lesions, had tumor regression ranging from partial to total when Highly Active Antiretroviral Therapy was administered. Early diagnosis and antiretroviral therapy will decrease morbidity, mortality and severe Immune Reconstitution Inflammatory syndrome (IRIS) common in patients with aggressive HIV associated KS.

INTRODUCTION

Kaposi's Sarcoma (KS) is a vascular tumor that can affect any part of the body. Though called a sarcoma, some schools do not consider it a neoplastic tumor for the following reasons: It has a multifocal origin, runs a low indolent course with few mitotic features and does not spread by metastases, instead it does by extension. It was first described in 1872 by Moricz Kaposi, a Hungarian Dermatologist (1). The first case of KS in Cameroon was described in 1922(2). Before this time the tumor was thought to be absent in Africans. In classic and endemic KS, more males are affected. (2,3,4)

Immune suppression associated or iatrogenic KS is seen in organ recipients and patients on immune suppressive therapy for a variety of medical conditions. KS associated with HIV infection is the last to be described. This tumor was first described in patients, who were later found to be HIV positive in 1981 in New York (5). HIV associated KS is a major cause of morbidity and mortality in HIV/AIDS patients. The characteristic clinical presentation are flat topped nodular-macular lesions with dark brown to purple color, involving lymph nodes, viscera, skin and mucosa. There are macules and nodules of different sizes, infiltrative

plaques, florid ulcerated lesions, fungating lesions and lymphadenopathic types with lymphedema and lymph node involvement. KS is an AIDS defining cancer. The prevalence in western countries varies from 0-30%(6). In certain tropical countries the prevalence of HIV associated KS has been found to be below 10% (6, 7, 8, 9). However, there are strong regional variations. Viroj et al found no case of KS in their Thai series; while Nnoruka et al in Nigeria and Stebbing et al in the UK found 3.3 % and 6% respectively (7,8,9,10). In Cameroon, neither the prevalence nor the characteristics of the tumor have been documented.

The purpose of this cohort study was to evaluate and describe the clinical characteristics of and the prevalence of HIV/AIDS associated KS in Cameroon. This study was carried out at the University Teaching Hospital Yaoundé between January and December 2005.

MATERIAL AND METHODS

All case notes of patients with HIV/AIDS associated KS in the Department Of Medicine of the University Hospital were studied. We collected 1700 HIV positive patient records seen by the Dermatology Department at the University

Teaching Hospital between January and December 2005. Of these 1,700 patients, 165 patients with confirmed Kaposi's Sarcoma were included in the study. Data collected included, demographic information, site of lesions, duration of lesions, and delay in presentation. Treatment received and outcome were also documented. Patients were monitored for durations ranging from four weeks to four years.

RESULTS

Among the 1700 HIV/AIDS patients who were seen during this period, 165 (9.7%) had HIV associated KS. KS was the presenting problem in 123/165 of HIV positive patients (75%). The delay before presentation was three to six months.

There were 75 males and 90 females. Their ages ranged from 20 to 65 years (Table 1). The age group most affected was 25 to 44 years (n =115) representing 69.7 % of all cases.

Figure 1

Table 1: Age Distribution

Age range	Frequency	Percentage
15-24	18	10.9%
25-34	50	30.3%
35-44	65	39.4%
45-54	25	15.2%
55-65	7	4.2%
Total	165	100%

Ninety patients (55%) had generalized disease. Forty-eight had lesions on the limbs, 5 had pulmonary lesions, and 5 had lesions in the gastrointestinal tract (GIT). Other sites included the eyes, genitalia, palate and tongue (Table 2). Twelve and 6 cases had GIT and lung involvement respectively. Two patients developed gastrointestinal bleeding due to visceral KS.

Figure 2

Table 2: Site of lesions

Site of lesion	Number	Percentage
Generalized	90	55%
Pulmonary	5	3%
Limbs (upper and lower)	48	29%
Gastrointestinal Tract	5	3%
Others; Eyes, palate, mouth	17	10%
Total	165	100%

Only 123 had a CD₄ cell count done. Among those with CD₄ cell count 65/123 (52.8%) had CD₄ cell count below 50 cells/mm³ (Table 3). Only 14 patients had done a viral load and the values ranged between 1,368 copies/ml to 2,638,456 copies/ml.

Figure 3

Table 3: CD4 Cell Count Distribution in 123 patients

CD4 Range (mm ³)	Frequency	Percentage	Cumulative Percentage
1-10	30	24.4%	24.4%
11-20	10	8.2%	32.6%
21-30	6	4.8%	37.4%
31-40	4	3.2%	40.6%
41-50	15	12.2%	52.8%
>50	58	47.2%	100%
Total	123	100%	

Only 71 (42.6%) had a platelet count done (Table 4). A majority of the patients had platelets above 100,000/mm³, all nine patients with platelets below 50,000/mm³ died.

Figure 4

Table 4: Platelet levels in patients (n = 71)

Platelet level/mm ³	Frequency	Percentage
0-20,000	2	2.8%
21 – 50,000	7	9.8%
51 to 100,000	7	9.8%
> 100,000	55	77.5%
Total	71	100%

Figure 5

Table 5: Hemoglobin levels in patients (n = 89)

Hemoglobin level (g/dl)	Frequency	Percentage
< 6	30	33.7%
7 – 9	32	36.0%
> 10	27	30.3%
Total	89	100%

Sixty-four patients died without receiving antiretroviral (ARV) drugs. Sixty patients received ARV drugs, 9 had chemotherapy and ARV and 3 had radiotherapy and ARV (Table 6). Most deaths occurred less than 6 months from the first visit to the hospital. Others died from the recrudescence of KS after the introduction of Highly Active Antiretroviral Therapy (HAART), following Immune Reconstitution Inflammatory Syndrome (IRIS). Forty were alive at the end of the study, while 30 were lost to follow-up. The patients who survived were those who had localized disease.

Figure 6

Table 6: Treatment Regimens Received (n=72)

ARV (Antiretroviral)	Number
ARV only	60
ARV + Chemotherapy	9
ARV + Radiotherapy	3
ARV + Chemotherapy + Surgery	0

DISCUSSION

The prevalence of HIV associated KS in our study is 9.7%. The prevalence of HIV associated KS varies from one geographical region to the other and also from one cultural group to the other. This variation may range from 0% to 30% (6, 7, 8, 10, 11, 12, 13, 14). A high prevalence is usually associated with homosexual practices (13, 14). HIV associated KS was first described in homosexual men. There was only one homosexual man in our series. Infection was mainly by heterosexual contact.

In this study of 165 patients with HIV associated KS, the male:female ratio is 1:1.2 (45 males and 55% females). Other authors have reported an increase in the number of females with HIV associated KS. (15, 16) This increase is not consistent with our findings, as the ratio is similar to the normal sex distribution in Cameroon.

The mode of infection in our patients is almost 100% heterosexual. There may be a different route of infection for Human Herpes Virus type 8 (HHV8), the oncogenic virus for Kaposi's sarcoma. This concurs with the findings of Gessain et al (17) that HHV8 infection is acquired during childhood in Cameroon. Therefore, aside from sexual transmission of HHV8, vertical transmission is possible (18) and may be oro-fecal transmission in low resource settings where clean water is a luxury. One of the characteristics of HIV associated KS in our study is younger age group. Of the 165 patients, 115 (69.1%) were between the age of 25 and 44 years, as compared to endemic KS which is more common in men and with a higher incidence in older age groups. (4)

Ninety patients, (55%) had generalized disease with multiple nodules and plaques, scattered all over their bodies. Generalized KS was associated with high mortality in this study. The mucosa were also involved in those with generalized lesions. Forty-eight patients, (29%) had lesions involving only upper and lower limbs.

The patients with visceral lesions presented with vague

abdominal pain and pains mimicking peptic ulcer disease. These cases of abdominal KS were confirmed by endoscopy. Three of the GIT lesions were complicated by fatal GIT hemorrhages. Of the 123 patients who had their CD4 T-cell count done, 65(52.8%) had a CD4 T-cell count less than 50, which is indicative of severe immune depression.

Treatment opportunities were limited by the cost of cytotoxic drugs. Mortality was associated with hemoglobin level below 6 grams, low CD4 count, severe immune depression and a heavy tumor burden.

CONCLUSION

The prevalence of HIV associated KS in this study was 9.7%, with KS heralding a diagnosis of HIV infection in 75% of patients. The site of the lesions was related to prognosis. Prognosis is better in those with localized lesions. Patients with generalized lesions, mouth lesions, low CD4 cell count and anemia had a very poor prognosis. ARV drugs improved the outcome when started early. A combination of chemotherapy and ARV is the best modality for treatment. Unfortunately radiotherapy and chemotherapy are very expensive. This is the major limitation to treatment in a resource limited setting.

We recommend that more studies be carried out to evaluate the factors that adversely affect the prognosis of HIV associated KS. Building awareness on the recognition of early KS lesions especially in young people along with HIV testing may make treatment more effective and improve outcome.

CORRESPONDENCE TO

Mbuagbaw Lawrence C. E. Bafut HIV/AIDS Treatment Centre, PO Box 2085, Bafut, North West Province, Cameroon Email: mbuagbawl@yahoo.com

References

1. Kaposi M. Idiopathic multiple pigmented sarcoma of the skin. Arch Dermatol Syphil 1872; 4:265-273 (English translation: CA-A Cancer J Clin 1982; 32:342-365)
2. Jojot C, Laigret J. Un cas de tumeurs superficielles observe au Cameroon Bulletin de la société de pathologie Exotique, 1922, 956.
3. Karen A. Yuan C. Kaposi's Sarcoma Medical progress Vol 342; 14: 1027-1038.
4. Taylor JF and Kyalwazi S. K. Kaposi's Sarcoma. In A. G. Shaper, J. W. Kibukamusoke, and M. S. R. Hutt (ed.), Medicine in a Tropical Environment.. Levenham Press, Ltd., Suffolk, England, pages 213 - 226.
5. Friedman KAE; Laubenstein I, Mannor et al. Kaposi's Sarcoma pneumocystis pneumonia among homosexual men-New York city and California. MMWR Morb Moortal Weekly Rep 1981; 30 305 -308.
6. Stebbing J, Sanitt A, Nelson M, et al. A prognostic index

for HIV antiretroviral therapy. *Lancet* 2006; May 6; 307 (9521) 1495-1502.

7. Kumara Sammy N, Solomon S, Madhivaran P et al. Dermatologic manifestations among immunodeficiency virus patients in South India. *International Journal of Dermatol* 2000; 39(3) 192- 195.

8. Wang J, Bokiah I. mucocutaneous manifestations of HIV infections: a retrospective analysis of 145 cases in Chinese population in Malaysia. *International Journal of Dermatol* 1999; 38, 457-463

9. Nnoruka E. N. Epidemic (human immunodeficiency virus - related) Kaposi's Sarcoma in West African women. *International Journal of Dermatol* 2003; 42. 794-799.

10. Viroj Wiwanikit. Prevalence of Dermatological disorders in Thai HIV - infected patients correlated with different CD4 lymphocytes count statuses: a note on 120 cases. *International Journal of Dermatol* 2004; 43. 265-269.

11. Morbidity and mortality weekly report *MMWR* 1981; 30: 250-252.

12. Smith C, Lilly S., Mann KP et al. AIDS-related malignancies. *Ann Med* 1998; 30:323-344

13. Friedman-Kien AE. Disseminated Kaposi's Sarcoma syndrome in young homosexual men. *J. AM Acad Dermatol* 1981; 468-471

14. Hymas KB, Greene JB, Marcus A et al. Kaposi's Sarcoma in homosexual men a report of eight cases. *Lancet* 1981;2:298-600.

15. Taporo JW, Conant MA, wolfe SF et al Kaposi's Sarcoma: Epidemiology pathogenesis, histology, clinical spectrum, staging criteria and therapy. *J. AM Dermatol* 1993;28:371-395.

16. Yoshioka, M. C. N., Alchorne, M. M. de A., Porro, A. M., Tomimori-Yamashita, J. Epidemiology of Kaposi's Sarcoma in patients with acquired immunodeficiency syndrome in Sao Paulo, Brazil. *International Journal of Dermatology*, 2004 (Vol. 43) (No. 9) 643-647 .

17. Gessain A, Maucere P, Van Beveren M et al. Human herpes virus and primary infections during childhood in Cameroon, Central Africa. *International Journal of cancer* 1999; 81: 189-192.

18. Sitas F, Newton, Bashoff C. Increasing maternal antibody titre for HHV8. *N Eng J Med* 1999; 340: 1923.

Author Information

Josephine Mbuagbaw

University Teaching Hospital, Yaoundé

Christopher Pison

University Teaching Hospital, Yaoundé

Lawrence Mbuagbaw

Bafut HIV/AIDS Treatment Centre, Bafut District Hospital

Charles Bengondo

University Teaching Hospital, Yaoundé

Blaise Kegoum

University Teaching Hospital, Yaoundé

Genevieve Bengono

University Teaching Hospital, Yaoundé

Maurice Nkam

University Teaching Hospital, Yaoundé

Kathleen B. Ngu

University Teaching Hospital, Yaoundé