

SCIENTIFIC PAPERS

Kaposi's sarcoma diagnosed at Muhimbili National Hospital during the period 1993 to 1999 By SIJAONA A. and KIKWILU EN

Abstract

Kaposi's sarcoma has been strongly linked with HIV/AIDS epidemic in many countries. Data on Kaposi's sarcoma in Tanzania that has been published up to 1992 indicate a strong link with HIV/AIDS. No published reports on Kaposi's sarcoma for the period 1993 to date were available at the time of commencing this study. The aim of this study was to describe the occurrence of Kaposi's sarcoma in Tanzania using Muhimbili National Hospital patients' data records during the period 1993-1999. Records of patients with histological diagnosis of Kaposi's sarcoma were retrieved from the cancer registry of Muhimbili Medical Centre (now Muhimbili National Hospital), Dar es Salaam. Variables of interest were year of diagnosis, age, sex, site of Kaposi's sarcoma lesion and HIV sero-status. Data was entered and analysis using SPSS for Windows version 9.1. A total of 899 cases of Kaposi's sarcoma were diagnosed at MNH during the period. Of 754 whose age and sex records were retrieved, 517 (68.6%) were males. The year 1999 had the highest records of cases diagnosed (21%). Age group 31-40 had the highest records of patients (n= 300) diagnosed as having Kaposi's sarcoma. The overall male-female ratio was 2.1:1. Of all cases with site description, 74% had lesions limited to extremities. Lesions on other sites were exclusively found in HIV sero-positive cases. Of all 219 cases that had HIV sero-status retrieved, 193(88.1%) were HIV positive. Only 5 of the 74 female cases whose HIV sero-status record were retrieved were HIV negative. It is concluded that Kaposi's sarcoma cases increased overtime when compared with previous data, the male-female ratio has reduced to 2.1:1, and occurrence of Kaposi's sarcoma on sites other than extremities is highly indicative of presence of HIV infection in an individual case.

Introduction

Published reports on the epidemiology of Kaposi's sarcoma (KS) over years before and after HIV/AIDS- era indicates two distinct distributions: pre- and post Acquired Immunodeficiency syndrome (AIDS) era (1-4). In pre-AIDS era, Kaposi's sarcoma was a rare

condition and drew insignificant attention. It was commonly seen in males in Africa, Middle East and Caribbean countries. Only small proportions of women developed Kaposi's sarcoma. Its clinical presentation was typically a non-aggressive skin condition of extremities, especially lower limbs. Children under 15 years developed nodular type of KS. After AIDS was recorded in early 1980s', KS incidences has increased, geographical distribution has changed from being an African, Middle East and Caribbean countries' condition to all countries affected by HIV/AIDS epidemic. The females are equally affected as males are, and the progression is rapid and invasive involving lymphatic system, mucous membranes and viscera.

The increase in the occurrence of Kaposi's sarcoma among different populations during the HIV/AIDS era has been documented in many countries. In their extensive review of the estimated incidence rates for three immunodeficiency virus (HIV)-associated cancers KS, Burkitt's lymphoma (BL) and other non-Hodgkin's lymphomas (NHLs) from across the African continent based on data collected before and after the HIV epidemic, Cook-Mazaffari and his co-workers showed that the occurrence of KS had increased 20 times during HIV epidemic in Uganda and Zimbabwe (3). This increase is likely to be due to the fact that people living with HIV/AIDS are at higher risk of developing Kaposi's sarcoma than the general population and/or people with other chronic conditions/diseases. Beral and his associates analyzed data reported to Centres for Disease Control in the United States of America up to March 1989. The data did show that Kaposi's sarcoma was at least 20,000 times more common in persons with acquired immunodeficiency syndrome (AIDS) than in general population and 300 times more common than in other immunosuppressed groups (5). In Uganda, the risk of developing Kaposi's sarcoma was significantly higher among HIV infected children than in children with other conditions [OR=94.9; 95% CI = 28.5-315.3] (6). In South Africa the risk of developing KS among people with HIV

infection was higher than among persons with other cancers [OR=21.9; CI=12.5-38.6] (7).

The increase in Kaposi's sarcoma among people living with HIV/AIDS may be explained from etiologic point of view as well as from immunological point of view. Beral and his associates assessed social and demographic characteristics, including sexual behavior, of 65 homosexual or bisexual men with AIDS from London. Sexual practices in which there was contact with partner's faeces before AIDS developed, was the main determinant of Kaposi's sarcoma risk. Risk increased with frequency of insertive "rimming" (oral-anal contact). Kaposi's sarcoma developed in 18% of the men with AIDS who reported never having practiced insertive rimming compared with 50% who practiced it less than once a month, 73% between once a week and once a month, and 75% or more among those who practiced it once a week. The authors pointed that there is a suggestion that the agent causing Kaposi's sarcoma is transmitted in the same way as the agent causing HIV/AIDS (8). In his review of epidemiology of Kaposi's sarcoma, Beral made two conclusions: First, Kaposi's sarcoma was caused by a transmissible agent, and that sexual contact was the most important mode of transmission of the agent. The conditions that facilitated HIV transmission and the AIDS epidemic also facilitate transmission of the agent causing Kaposi's sarcoma. Second, immunosuppression allows Kaposi's sarcoma to manifest itself in individuals who are normally asymptomatic carriers of the Kaposi's sarcoma agent (9). The role of immunosuppression in developing Kaposi's sarcoma is further supported by recent studies that show a decrease in the occurrence of Kaposi's sarcoma among people living with HIV and are on regular dose of highly active antiretroviral therapy (HAART) which raises the CD4 counts (10-12).

Changes in sex ratios have also been recorded in different populations. Kahamba and his colleagues (2) analyzed records of patients with tumors who were diagnosed at Muhimbili National Hospital previously called Muhimbili Medical Centre during the years 1978 to 1992. The data did indicate clearly a shift in the occurrence of Kaposi's sarcoma among males and females. The male-females ratio changed from 5.8:1 during the period 1978-1982 to 2.6:1 during the period of 1988-1992. In Kenya analyses using patients data from Nairobi hospital during the pre and post AIDS era indicated a similar shift in male-female ratio

from 10:1 during the period 1968-1982 to 2:1 during the period 1983-1997 (4).

Proportions of cases with atypical type of Kaposi's sarcoma (patients with nodules that were disseminated tending to concentrate more on trunk, mucocutaneous nodules, nodules in bizarre sites like the genitalia, buttocks, eyelids, glandular involvement in patients above fifteen years of age and those with a short fulminant course) were higher in post-AIDS era than in pre-AIDS era. The proportion of atypical KS changed from 18.7% in pre-AIDS era to 74.2% during the AIDS era (Kahamba et al 1994).

The available data on the occurrence of Kaposi's sarcoma in Tanzania is scarce and limited to the year 1992. It would be of interest to document its occurrence after year 1992 when HIV/AIDS has affected all the regions and communities in Tanzania. The information so obtained would add to the existing body of knowledge on the occurrence of Kaposi's sarcoma in Tanzania, a country hit by HIV/AIDS which has been shown to have positive influence on the occurrence of Kaposi's sarcoma. Since atypical Kaposi's sarcoma is affecting life and socially sensitive parts of the body, documentation of these features of Kaposi's sarcoma in Tanzania and its relationship to HIV/AIDS may stimulate decision makers to respond to the long overdue urgency of making highly active antiretroviral therapy (HAART) available to all people living with HIV/AIDS in order to reduce its occurrence since it has been documented that HAART, when used as recommended reduces the risk of developing AIDS and Kaposi's sarcoma.

The aim of this study was therefore to describe the occurrence of Kaposi's sarcoma diagnosed at Muhimbili National Hospital during the period 1993 to 1999.

Materials and Methods

Records of patients with histological diagnosis of Kaposi's sarcoma during the years 1993 through 1999 were retrieved from the cancer registry of Muhimbili National Hospital, then called Muhimbili Medical Centre (MMC), Dar es Salaam. Most of the histological diagnoses in Tanzania during the period reviewed were conducted at MMC, but few were done at Kilimanjaro Christian Medical Centre (KCMC). Therefore histological records in MNH represent majority of cases reported and investigated in hospitals of mainland Tanzania. Data collected included patient's age, sex, anatomical site of KS

and HIV serostatus. Patients' clinical files were also traced at the patients' registry office, MNH in the efforts to obtain as complete set of data as required. The data was then entered and analyzed using SPSS for Windows version 9.1. Frequency distribution of KS cases by age, sex, anatomical location and serostatus were generated.

Results

Table 1 shows the distribution of cases with histological diagnosis of Kaposi's sarcoma by year. Highest number of cases (21% of all cases) was diagnosed during the year 1999. The least cases (9.0%) were diagnosed in 1994.

The distribution of Kaposi's sarcoma cases diagnosed by age and sex is shown in table 2. Out of 899 cases diagnosed as having KS, only 754 (85.9%) had their age and sex documents available for analysis of whom 517 (68.6%) were males and 237 (31.4%) were females. Modal age group was 31-40 years of age for both sexes, with a total of 300 cases diagnosed. Only 24 cases aged 10 years or lower were diagnosed during the whole period of 7 years. The overall male-female ratio was 2.2:1.

Table 3 shows the distribution of Kaposi's sarcoma lesions by site and HIV serostatus. Only 86 cases had description of the site indicated. Seventy four percent of lesions were on extremities. Lesions on other sites were found in HIV cases only.

The distribution of KS cases by sex and HIV serostatus is shown in table 4. Only 219 cases diagnosed as having KS had their HIV serostatus retrieved. One hundred forty five (66.2%) were males. One hundred ninety three (88.1%) were HIV seropositive. Only 5 (19.2%) of HIV seronegative cases with KS were females.

Discussions

There were difficulties in obtaining complete data with all the prior set variables. This made it difficult to compare the occurrence of Kaposi's sarcoma with HIV sero-status and site, a very important comparison in this era of HIV/AIDS epidemic. Therefore the relationship between Kaposi's sarcoma and HIV/AIDS should be interpreted with caution in this study.

A total of 899 cases were diagnosed as having Kaposi's sarcoma during this period of 7 years. In the study reported by Kahamba only 480 cases were diagnosed during the period of 14 years

(1978-1992) (2). Assuming that the utilization of health services in Tanzania remained the same, then the average cases diagnosed during the years 1978-1992 was $480/14 = 34$ cases/year, and the average cases diagnosed during the years 1993-1999 was $899/7 = 128$ cases/year. This is a four times increase in cases diagnosed. Although non-availability of data on sero-status of all cases diagnosed as having Kaposi's sarcoma limits the explanation of this increase based on HIV/AIDS epidemic in Tanzania, the population increase from 23 million (1988 census) to 34 million (2002 census) also cannot explain this increase. Therefore it is plausible to ascribe this increase to the HIV/AIDS epidemic.

A male-female ratio of 2.1:1 which is slightly lower than one reported by Kahamba and his colleagues (2) for period 1988-1992 (2.8:1) and far less than for period 1997-1982 (5.8:1) points to the increased predisposing factor that makes Kaposi's sarcoma manifest in females than ever before, HIV/AIDS being the most possible cause.

The modal age group of 31-40 and that of 21-30, which was the second agegroup with the highest frequency of cases, coincide with the age groups with high frequency of HIV/AIDS cases in Tanzania. This is a further clue to the possible positive relationship between Kaposi's sarcoma and HIV/AIDS. The few cases with complete set of data on site of lesions of Kaposi's sarcoma and HIV sero-status point to the close relationship between the two conditions. All cases with lesions on sites other than extremities were HIV sero-positive. The fact that 88% of all cases of Kaposi's sarcoma were HIV seropositive, and that only 6.7% females with Kaposi's sarcoma were HIV seronegative point to the close relationship between Kaposi's sarcoma and HIV/AIDS.

It can be concluded that the findings in this study show an increase of Kaposi's sarcoma cases at Muhimbili National Hospital from 34 cases/year between 1978-1992 to 128 cases/year between 1993-1999. There is also a reduced male-female ratio from 5.8:1 during the period 1978-1982 to 2.1:1 during the period 1993-1999. All these findings are similar to those reported in Uganda, Kenya, Zimbabwe, South Africa and United States of America (3, 5-7).

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Table 1: Distribution of cases with histological diagnosis of KS by Years

Year	No of cases	Percent
1993	89	10.7
1994	81	9.0
1995	154	17.1
1996	122	13.6
1997	105	11.7
1998	150	16.7
1999	191	21.2
Total	899	100.0

Table 2: Distribution of cases with histological diagnosis of KS by Age and Sex

Age-group (yrs)	Sex		Total	M/F ratio
	Male	Female		
0-10	16	8	24	2.0:1
11-20	12	12	24	1.0:1
21-30	87	69	156	1.3:1
31-40	206	94	300	2.1:1
41-50	90	33	123	2.7:1
51-60	44	6	50	7.3:1
61+	62	15	77	4.1:1
TOTAL	517	237	754	2.2:1

Missing age or sex specification = 145

Table 3: Distribution of cases with histological diagnosis of KS by site and HIV Serostatus

SITE	Sero-status		TOTAL
	HIV +ve	HIV -ve	
Oral cavity	5 (100.0)	0	5 (100.0)
Extremities	55 (74.3)	19 (25.7)	74 (100.0)
Other sites	7 (100.0)	0	7 (100.0)
Total	67 (88.0)	19 (22.0)	86 (100.0)

Missing site of lesion = 813 cases

Table 4: Distribution of cases with histological diagnosis of KS by sex and HIV Serostatus

SEX	Serostatus		Total
	HIV +ve	HIV -ve	
Male	124 (85.5)	21 (14.5)	145
Female	69 (93.2)	5 (6.8)	74
Total	193 (88.1)	26 (11.9)	219

Missing sex and serostatus = 680 cases