

Demographic and Histopathologic Study of Kaposi's sarcoma in a Dermatology Clinic in the Years of 2006 to 2011

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Abstract- Kaposi's sarcoma is a low-grade vascular tumor that its prevalence is increasing all around the world due to the increasing prevalence of HIV and organ transplantations. In this study, we assessed risk factors of Kaposi's sarcoma among Iranian patients were referred to Dermatopathology Department of Razi Hospital of Tehran University of Medical Sciences between the years of 2006 to 2011. Also, disease stages have been assessed on pathologic specimens. Thirty four patients diagnosed with Kaposi's sarcoma entered the study. Of the 34 patients, 29% were female, and 71% were male, mean age was 66 years and average disease duration was 6 months. The most common patient's pathologic stages were reported: patch 32%, patch to plaque 24%, plaque 12%. The most prevalent location of involvement was lower extremity (88%), and upper extremity was involved in 24%. At presentation time, the mean number of lesions was 3 to 4. 15% of patients had a history of smoking and 15% had a history of immunosuppressive drugs. HIV infection did not observe in the patients. Based on the present study, Kaposi's sarcoma is a disease of elderly and is higher in older men. The most common site of Kaposi's sarcoma involvement is lower extremity, and the most common pathologic stage was the patch to plaque.

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Introduction

Kaposi's sarcoma (KS) is a multifocal vascular endothelial angioproliferative disorder that primarily affects mucocutaneous tissues and has the ability of organ involvement (1) the disease can be divided into four subtypes, including classical, epidemic, endemic, and iatrogenic (2,3) that each has a different location and prognosis (4,5).

One type of herpes virus so called Kaposi's sarcoma-associated herpes virus or human herpes virus type 8 was found in all cases of Kaposi's sarcoma (6), which is now known as the primary cause of all forms of KS (7), of course KS can be seen in a limited number of People with this virus and several environmental and epidemiological risk factors are responsible for the occurrence of this disease, for example, usage of immunosuppressant drugs and AIDS play an important role. Kaposi

sarcoma is a low grade vascular tumor that its prevalence around the world is increasing due to the increasing prevalence of HIV infection and organ transplantation. In this study, we tried to assess risk factors of Kaposi sarcoma among Iranian patients, and also the stages reported in pathologic specimens. Furthermore, individual factors with the possible effect on the incidence of the disease were also studied.

Materials and Methods

All the specimens of Kaposi's sarcoma that were diagnosed in Dermatopathology Department of Razi Hospital of Tehran University of Medical Sciences, between the years of 2006 to 2011 were studied. Finally, 34 patients with diagnosis of Kaposi's sarcoma entered the study. Razi Hospital (Tehran/Iran) is one of the central referral hospitals in skin disease with large

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number of Kaposi's sarcoma cases in Iran.

Patients were diagnosed by pathologic confirmation and patients with complete records were included. HIV positive and negative patients were included. Pathological results and histopathologic slides were reviewed by two pathologists for entering our study. It should be mentioned that new specimen for pathologic examination were not taken.

Finally, demographic data were recorded for each patient in the form of collection information and data on variables such as age, sex, location of sample, number of lesions, duration of lesions, smoking, history of diabetes, family history, smoking, HIV infection, and also immunosuppressive medications extracted from the patients previous form which was then recorded in prepared form of this study. In the cases of incomplete data, patients were contacted and information was completed.

After analyzing the collected data, using SPSS statistical software, the frequency, average, range of variation, tables and charts and descriptive diagrams, were used to report the patient's data.

Result

Records of 34 patients who came to Razi Hospital, (Tehran/Iran) between the years of 2006 to 2011, and were administered with the diagnosis of KS were evaluated. 10 patients (29%) were females and 24 patients (71%) were male. The mean age of the patients in the study was 66 years with the maximum of 87 years and the minimum of 33 years. Middle (quartile 50) was 71 years. Average disease duration was 6 months, with the maximum of 24 months and minimum of 1 week. Middle duration of the illness among patients was 4 months.

The pathological stage of patients in 11 cases (32%) was a patch, in 8 cases (24%) patch to plaque, in 4 cases (12%) plaque, 3 cases (9%) were plaque to nodule ,3 cases (9%) were nodular and in 5 cases (14%) it was unknown (Figure 1).

Location in two cases (6%) was the hands, in one case (3%) the upper extremity, and in 9 patients (26%) in the feet, in 8 cases (24%) the lesions were located on lower extremities, in 12 (35%) on hands and feet, in one case (3%) on upper and lower extremities, and in one case (3%) they were located in the trunk (Table 1).

Table 1. Demographic properties (qualitative variables) of patients

	variable	Percentage (%)	frequency
Sex	Female	29	10
	Male	71	24
Stage of the disease	Patch	32	11
	Patch to plaque	24	8
	Plaque	12	4
	Plaque to nodule	9	3
	Nodular	9	3
	Unknown	14	5
Location of the disease	Hand	6	2
	Other locations of the upper extremity	3	1
	Foot	26	9
	Other locations of the lower extremity	24	8
	Hand and foot	35	12
	Upper and lower extremity	3	1
	Trunk	3	1
Sum		100	34

The mean number of lesions in patients at the time of the presentation was 3.6, with the maximum number of lesions being 8 and the minimum of one lesion. Middle

number of 3.5 was calculated for the number of lesions (Table 2).

Table 2. Demographics properties (quantitative variables) of patients

Variable	Middle	Max	Min	Average
age	71	87	33	66
Duration of disease (month)	4	24	0.25	6
Number of the lesions	3.5	8	1	3.6

Among patients with KS who came to Razi Hospital, (Tehran/Iran) during the years of 2006 to 2011, 5 cases (15%) had a history of smoking and 29 cases (85%) didn't have any history of smoking. Also, 5 patients (15%) who were admitted to the hospital had a history of taking immunosuppressive drugs before and the other 29 cases (85%) didn't have such a history. None (0%) of patients with KS admitted to Razi Hospital (Tehran/Iran) mentioned HIV infection at presentation time and neither of them had positive familial history of Kaposi's sarcoma (Table 3).

Table 3. HIV status, immunosuppression, smoking, personal history and family history of Kaposi's sarcoma in patients

Variable		Percentage (%)	Frequency
AIDS	positive	0	0
	negative	100	34
Immunosuppression	yes	15	5
	no	85	29
Smoking	yes	15	5
	no	85	29
Family history	yes	0	0
	no	100	34
Sum		100	34

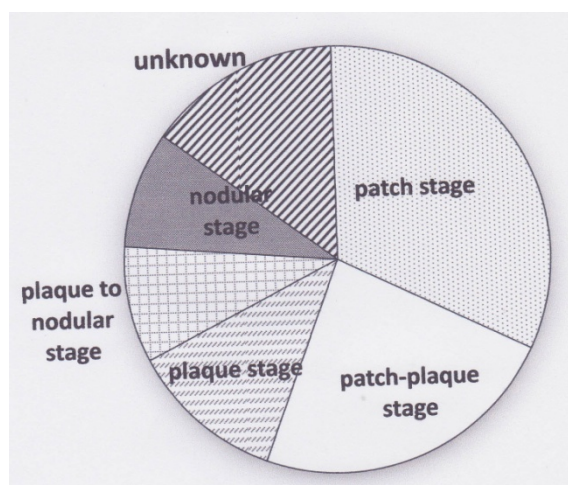


Figure 1. Pathological stages of disease

Discussion

Classic Kaposi's sarcoma is the most common form of this disease that most often affects geriatric population in Eastern Europe, the Middle East and Mediterranean regions, and its prevalence is variable in different areas. (10-8). An epidemiological study of KS which was performed in Iran in the year of 1998 to 2007, had calculated the annual incidence of this disease

to be 0/10 to 0/17 per 100,000 in men and 0/06 to 0/08 per 100,000 in women. The peak incidence was between 50 to 79 years. Also, the male to female ratio was mentioned 1/8 to 3/2(11). One study in Israel, showed, although the Jewish people have a higher incidence of KS, Iranian immigrants in Israel had the lowest prevalence (12).

In this study, the incidence of KS in men was more than women and male to female ratio was 2/4. The results was consistent with the results of the study in Peru (5) (ratio of 2/6), Israel (12) (ratio of 2/6) and Italy (13) (ratio of 2/5).

The mean age of patients in this study was 66 years, consistent with results of Peru (5) (mean 68 years) and Greece (14) (mean of 66 years) but it was lower compared to the means calculated by the study in America (15) (mean of 74 years) and study in Mediterranean islands (16) (mean of 80 years).

Studies on the location and duration of KS lesions rarely had been done. In this study, the location of lesions were the extremities, especially the lower extremities. Generally, the lower extremity was involved in 88% of cases, consistent with the results of the board in America(15), (65% lower extremity was involved). Other studies have not evaluated the location of lesions as a variable.

The number of lesions at presentation in most cases was more than one, and an average of 3 to 4 lesions. Maximum number of lesions reported was 8. This factor has not been examined in other studies. In this study, the average duration of disease was estimated 6 months (minimum 1 week and maximum 24 months). This factor, also, has not been examined in other studies.

The reported pathological stage of the lesions in the majority of cases (32%) was patch and patch to plaque (24%), the lowest level was of the nodular stage (9%). The results are inconsistent with the results of a study in America (15), in which the majority of cases (83%) were nodular stage. Other studies have not examined the pathological stages of Kaposi's sarcoma.

In a study in Thailand between 1994 and 1998, 0.2% of AIDS patients developed KS that was lower than other studies in America (17, 15). None of the patients of this study mentioned the AIDS that was Inconsistent with the results of other studies, because in most studies of Kaposi's sarcoma, AIDS-related KS is the most common type of KS reported. Perhaps this might be explained by that the specialized center of AIDS in Iran, differ from the center of dermatologic disorder, so AIDS patients who are suffering from many complications,

one of which is developing KS, are lesser referred to a specialized dermatology center.

In a study of risk factors of KS in Italy, it was concluded that smoking is negatively correlated with the incidence of KS, and consuming more cigarettes clearly reduces the incidence of KS, in this study, 15% of patients were smokers which was lower than the percent of smokers in Iran. Also Immunosuppressive drugs and lack of hygiene lead to increased incidence of KS (18).

15% of KS cases in this study were associated with immunosuppressive drugs (one case following renal transplantation). The exact number of cases of KS related to the immunosuppressive drugs has not been provided in other studies. In this study, one patient (2%) had a history of Kaposi sarcoma in one area but experienced recurrence in another site. In one study in Peru (5) 8/2% of patients had disease recurrence.

According to the increasing prevalence of taking immunosuppressive drugs and diseases weakening the immune system (such as AIDS), increase in the incidence of KS is also expected. Based on the present study Kaposi's sarcoma is a disease of elderly and is higher in older men. Lower extremities are the most common site of involvement in patients with KS. KS should be considered, when encountered with vascular lesions, especially in people with risk factors such as older age, or immunosuppressive drugs Consumption or any other causes of suppressed immune status.

Since positive serology can only represent the HHV8 infection and also only in certain people it has the ability to predict the risk of KS, serologic studies to confirm the diagnosis is not a proper process. Biopsy of the lesion and examination of the pathological features accompanied by a complete history, also the type of the lesions and their distribution, provide a possibility of definite diagnosis.

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