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Kaposi's sarcoma in Vaud and Neuchatel, Switzerland, 1978–2002

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Abstract

We have considered trends in the incidence of Kaposi sarcoma (KS) between 1978 and 2002, using data from the Swiss Cancer Registries of Vaud and Neuchâtel (786 000 inhabitants). Overall, 163 cases were registered, 149 in men and 14 in women. After a peak reached in 1988–1992 in both men (2.71/100 000, world-standard) and women (0.26/100 000), a considerable decline was observed thereafter, to reach 0.80/100 000 men and 0.06/100 000 women in 1998–2002. In men, there was a substantial decline (from 4.91/100 000 in 1988–1992 to 0.56 in 1998–2002) at age 15–44 years, a fall from 2.91 in 1993–1997 to 2.37 in 1998–2002 at age 45–64 years, but some increases over the last decade in the elderly, likely due to cases of classic KS. The declines in KS confirm that earlier anti-retroviral therapies (HAART) had already reduced the risk of KS, and the newest highly active anti-retroviral therapies have further contributed to the decline of KS in recent years.

Keywords: Kaposi's sarcoma; Incidence; Time trends; Population-based; Cancer registry; Switzerland

1. Introduction

Over the last two decades, trends in the incidence of Kaposi's sarcoma (KS) in North America and Europe have been dominated by the phases of the acquired immuno deficiency syndrome (AIDS) epidemic [1–4]. In the French-speaking Swiss Canton of Vaud, there were no cases of KS registered in the pre-AIDS era (1974–1982), but a steady rise in incidence was observed in the 1980s, reaching rates of 2.6/100 000 men (age-standardised on the world population) and 0.7/100 000 women in 1989–1990. This was related to the start of the AIDS-related KS epidemic [5].

2. Patients and methods

We have updated trends in incidence of KS to 2002, using data from the cancer Registries of Vaud and Neuchâtel whose populations, according to the December 2000 National Census, were 620 294 and 165 731, respectively [6,7]. The morphology code of the International Classification of Diseases-Oncology (ICD-O [8]) for KS (M9140) was used to identify cases. Age-standardised rates were computed on quinquennia of age using the world standard population. Overall, 163 cases were registered, 149 in men and 14 in women; 143 were cutaneous, nine oropharyngeal, three gastro-intestinal, two lung, three soft tissue and three unspecified KS.

3. Results

Table 1 shows the number of cases and age-standardised KS incidence rates, overall and in three age-groups

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Table 1
Number of registrations (N) and annual age-adjusted (world population) registration rates per 100 000 of Kaposi's sarcomas by gender, age and calendar period, Vaud and Neuchâtel Cancer Registries, Switzerland, 1978–2002

Calendar period	Males ($N = 149$)				Females ($N = 14$)			
	Age (years)			All-age standardised rates (world)	Age (years)			All-age standardised rates (world)
	15–44	45–64	>65		15–44	45–64	>65	
1978–1982	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)
1983–1987	1.89 (16)	1.64 (6)	0.00 (0)	1.12 (22)	0.14 (1)	0.29 (1)	0.00 (0)	0.12 (2)
1988–1992	4.91 (46)	2.92 (12)	0.58 (1)	2.71 (59)	0.46 (4)	0.25 (1)	0.20 (1)	0.26 (6)
1993–1997	3.23 (32)	2.91 (13)	0.68 (2)	1.99 (47)	0.09 (1)	0.65 (3)	0.00 (0)	0.16 (4)
1998–2002	0.56 (6)	2.37 (11)	1.59 (4)	0.80 (21)	0.00 (0)	0.00 (0)	0.79 (2)	0.06 (2)

(15–44, 45–64 and 65 years and over). After a peak reached in 1988–1992 in both men (2.71/100 000, at all ages) and women (0.26/100 000), a substantial decline was observed thereafter, to reach 0.80/100 000 men ($n = 21$) and 0.06/100 000 women ($n = 2$) in 1998–2002.

The upward trends in the 1980s and the consequent declines in both sexes are also shown in Fig. 1. Trends in separate age groups are displayed in Fig. 2 for men, which shows a substantial decline (from 4.91/100 000 in 1988–1992 to 0.56/100 000 in 1998–2002), in the youngest age group, a fall from 2.91/100 000 in 1993–1997 to 2.37/100 000 in 1998–2002 at age 45–64 years, but some increases over the last decade in the elderly. The upward trend in the elderly is based on a total of seven men and three women who were likely to be cases of classic KS. Indeed, a large proportion of them were migrants from Mediterranean areas where classic KS is endemic (three of Italian origin, two Turkish and one Romanian).

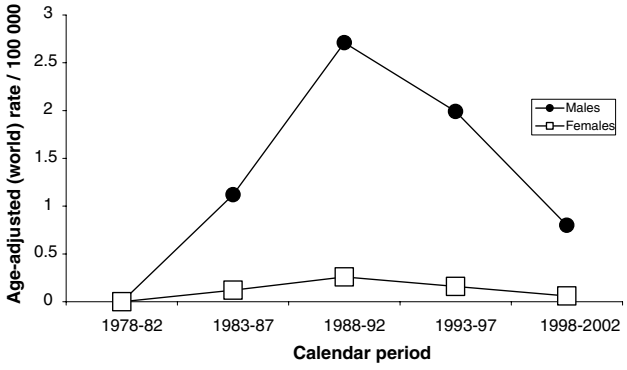

Fig. 1. Trends in overall age-standardised (world population) incidence rates of Kaposi's sarcoma in men and women, in the Swiss Cantons of Vaud and Neuchâtel, between 1978 and 2002.

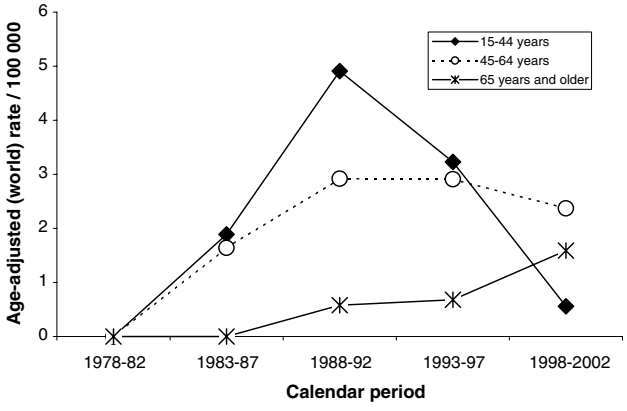

Fig. 2. Trends in age-standardised (world population) incidence rates of Kaposi's sarcoma in separate age strata in men, in the Swiss Cantons of Vaud and Neuchâtel, between 1978 and 2002.

4. Discussion

The present data from population-based cancer registries in Switzerland confirm the downward trends reported for KS in the United States' SEER (Surveillance, Epidemiology and End Results) cancer surveillance system [1]. For comparative purposes, Table 2 gives the estimated KS incidence rates in 1980, 1990 and 2000 in males from the SEER Program [1,9], and for the Vaud and Neuchâtel Cancer Registries.

Fig. 3 gives the KS rates in men over the period 1993–1997 for 21 selected European national or regional Cancer Registries covering around or over one million population [10]. The highest rates (1.5–4/100 000) were in Zurich, Switzerland, Italy and Spain, i.e., where the AIDS epidemic in young men occurred earlier and was more widespread [11]. To put these European figures in a worldwide context, the highest incidence rates of

Table 2
Estimated incidence rates/100 000 men of all races in the United States' Surveillance, Epidemiology and End Research (SEER) Program and in the Vaud and Neuchâtel Swiss Cancer Registries, around 1980, 1990 and 2000

	Calendar year		
	1980	1990	2000
SEER[a]	0.3	8.0	0.6
Vaud and Neuchâtel[b]	0.0	2.7	0.8

[a] Age-standardised on the 1970 United States (US) standard population by 5-year age groups (from [1,9]).

[b] Age-standardised on the world standard population by 5-year age groups.

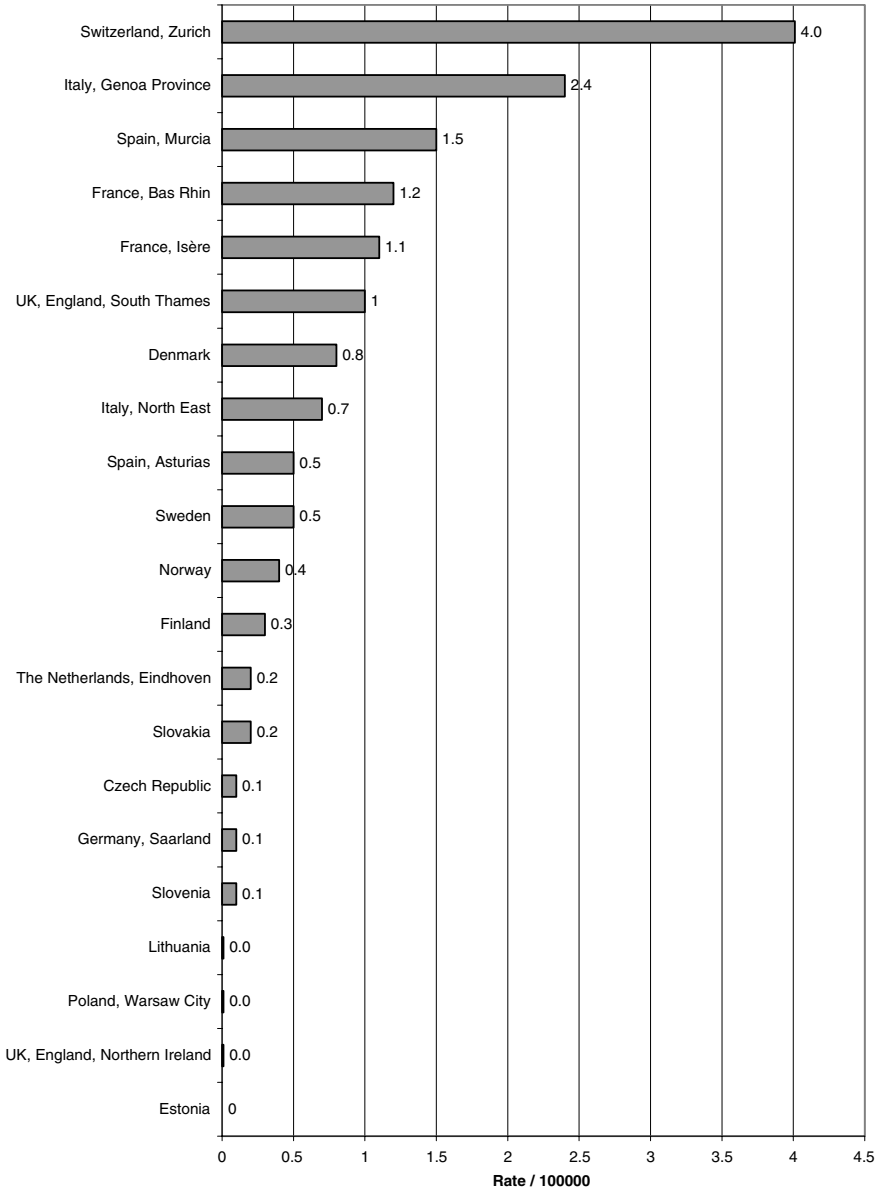

Fig. 3. Overall age-standardised (world population) incidence rates per 100 000 men of Kaposi's sarcoma in selected European national or regional Cancer Registries covering around or over one million population, 1993–1997 (data abstracted from [10]).

51/100 000 men were registered over the same calendar period in the African population of Zimbabwe, high rates (17/100 000) were also observed in US non-Hispanic White men from San Francisco, California, whereas KS was almost non-existent in most Asian populations [10].

Likewise, the rates of KS decreased by approximately 3-fold between 1992–1996 and 1997–1999 in a collaborative re-analysis of 23 prospective studies of individuals with HIV infection or AIDS from North America, Europe and Australia [12], and in a record-linkage study between the National Italian Registry of AIDS and the 19 Italian Cancer Registries KS incidence declined in men from 2.5/100 person-years in 1986–1992 to 1.0 in 1997–1998 [13].

Kaposi's sarcoma-associated herpes virus (KSHV) is now considered the cause of all types of KS [14]. When homosexual men modified their behaviour to prevent HIV, they may have reduced their risk of KSHV infection, thus contributing to a subsequent decline in KS risk [1]. More important, in HIV-infected individuals KS is many 100-fold more frequent than in the general population, but the risk increases greatly with the degree of immune suppression [15]. Even partial recovery of immunity (e.g., CD4 count above 200 cell/mm^3) prevents most cases of KS. The decline in KS in young and middle-age adults in Vaud and Neuchâtel is therefore consistent with the notion that anti-retroviral therapies used in the early 1990s had already reduced the risk of KS, and that the newest highly active anti-retroviral

therapies (HAART) have further contributed to the decline in the incidence of the disease after 1996.

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