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Letter

Kaposi's Sarcoma in Children with AIDS in Europe and the United States

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SEXUAL TRANSMISSION of HIV infection has been consistently related to an increased risk of AIDS-associated Kaposi's sarcoma (KS), the most common neoplastic complication of AIDS. KS, as an AIDS-defining illness, is approximately 10 times more prevalent in homosexuals and bisexuals than in men infected through needle sharing or contaminated blood, or among women who are sexual partners of bisexual men [1, 2]. The role of a sexually-transmitted infectious agent, other than HIV, in the aetiology of KS has, therefore, been hypothesised. Human herpes virus (HHV)-like sequences, homologous to those of gamma-herpes viruses implicated in tumoral processes—such as the Epstein-Barr virus—have been isolated in various forms of KS [3, 4], including both HIV seropositive and seronegative African children with KS [5], suggesting that this HHV may be involved in the pathogenesis of such neoplasm.

Further information for the investigation of the aetiology of KS may derive from children with AIDS, among whom HIV sexual transmission is excluded. Data on nearly 10000 children (less than 13 years of age) with AIDS, diagnosed as of June 1993 in Europe (4400 cases) and in the United States (4710 cases) according to the 1987 Centers for Disease Control (CDC) definition [6], were analysed. The data were derived from the national surveillance systems of 44 European countries (ENAAADS) and from the CDC surveillance system in the U.S. (AIDS Public Information Data Set). The aim was to compare, in the two areas, the frequency of KS as an AIDS-defining illness according to the mode in which children acquired the HIV infection. The chi-square test (with Yates' correction) was used to statistically evaluate different proportions [7].

KS was the AIDS-defining illness in 0.2% of European children (10 cases) and in 0.5% of children from the U.S. ($\chi^2_1 = 3.08$, $P = 0.08$) (Table 1). Perinatally, infection accounted for the largest group (87%) of children with AIDS in the U.S. and, to a lesser extent, in Europe (41%). Among such perinatally infected children, the frequency of KS was higher in the U.S. (0.5%) than in Europe (0.1%) ($\chi^2_1 = 3.79$,

Table 1. Distribution of children with Kaposi's sarcoma (KS) and AIDS in Europe and United States, 1981–1993

	Europe		United States	
	AIDS cases <i>n</i>	Cases with KS <i>n</i> (%)	AIDS cases <i>n</i>	Cases with KS <i>n</i> (%)
HIV risk groups				
Mother to child	1802	2 (0.1)	4121	20 (0.5)*
Haemophiliacs	163	2 (1.2)	202	0 (0.0)
Transfusion recipients	755	1 (0.1)	321	2 (0.6)
Nosocomial infection†	753	4 (0.5)	—	—
Other/undetermined‡	927	1 (0.1)	66	0 (0.0)
Gender				
Male	2480	7 (0.3)	2486	10 (0.4)
Female	1920	3 (0.2)	2224	12 (0.5)
Total	4400	10 (0.2)	4710	22 (0.5)

* Chi-square test, Europe versus United States: $P = 0.05$. † 99.5% of such European cases were registered in Romania, where four children were diagnosed with KS. ‡ 96.5% of such European cases were registered in Romania, where one child was diagnosed with KS.

$P = 0.05$) (Table 1). Romania is the site of the largest epidemic of AIDS in European children because of the re-use of unsterilized needles on wards in which children with AIDS formed the reservoir for infection [8]. All these infections occurred before 1990, when blood was not tested for HIV antibodies, and many Africans were present in Romania as students and temporary labourers and took part in government-sponsored 'voluntary' blood donation programmes [8]. They may have, therefore, contributed to the spread of the HIV epidemic in the nosocomial setting, where 5 of the 10 European KS cases were registered. 3 of the remaining European KS cases were infected through transfusions of blood or blood derivatives, and 2 cases acquired HIV infection from mother-to-child transmission (Table 1).

In contrast, in the U.S., 20 of the 22 children with KS

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acquired HIV by mother-to-child transmission. It is worth noting that of these 20 children, 17 were born to mothers originating in Haiti or in African countries, a group of women themselves at high risk for KS [1, 2]. KS was, in the U.S., nearly three times more frequent in black than in white children (0.66 and 0.23%, respectively, had KS) ($\chi^2_1 = 3.69$, $P = 0.05$) (not shown in the table). This finding is in agreement with recent reports of a significant increase of KS in childhood in Zambia, that coincides with the spreading of HIV infection [9]. In contrast to the high male:female ratio observed among adult KS cases, the prevalence of AIDS-associated KS in children was similar in the two sexes in both areas (Table 1).

The interpretation of AIDS surveillance data is limited because of potential weaknesses, in particular the lack of completeness and accuracy in the reporting of AIDS-associated diseases. In addition, such conditions, including cancers [10], reflect only the first AIDS event, thus potentially underestimating the frequency of KS. However, such data indicate that KS is very rare in children with HIV infection, as it is in immunocompetent children, and highlight the existence of different patterns of HIV transmission among children with KS in Europe and the U.S. It is likely that such differences, of borderline statistical significance, mostly stem from the different proportions, in the two areas, of children originating from African countries. Furthermore, the results of the present study supports the role of an infectious agent, not exclusively sexually transmitted, implicated in the aetiology of KS. Whether this agent is the same one associated with the sexual transmission of HIV in adults is a question that certainly deserves further attention.

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