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Kaposi's sarcoma at the University Teaching Hospital, Lusaka, Zambia in the antiretroviral therapy era

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Dear Editor

With great interest, we read the recent publication "Kaposi's sarcoma in HIV-infected patients in South Africa: Multicohort study in the antiretroviral therapy era" by Bohlius *et al*.[1] We congratulate the authors for their contribution to this field. In this study the authors observed a decrease in incidence of Kaposi's sarcoma (KS) in patients treated with anti-retroviral therapy (ART) when compared to patients who are not on ART. These results are encouraging because of the ongoing HIV epidemic in sub-Saharan Africa where KS is still one of the most prevalent cancers. Also, it is a relevant topic to study in South Africa; a country that has a high prevalence of both HIV and Kaposi's sarcoma-associated herpesvirus (KSHV) infections.

This study is of interest to us because we have investigated the incidence and prevalence of KSHV infection in Zambia for more than a decade. Zambia, also a part of Southern Africa, has approximately 13% HIV prevalence in the adult population. It also has a high incidence of both epidemic and endemic forms of KS. The University teaching hospital (UTH) in Lusaka, Zambia is the national referral hospital. It has a well-established Dermatology and Venereology Division where suspected KS patients are referred and present themselves for diagnosis and treatment. UTH receives these patients from the highly populated Lusaka city and other cities and provinces throughout Zambia. Therefore, UTH records more KS cases than other health care centers in Zambia. Indeed, we have routinely been diagnosing KS even after ART became widely available in Zambia. Between 2008 and 2013 we recorded at least 726 pathologist confirmed KS cases. Of these, 460 (63.4%) cases were diagnosed in HIV infected patients (epidemic KS) and 266 (36.6%) cases in HIV negative patients (endemic KS). We agree with the results reported by Bohlius *et al* about KS incidence being higher in men. In our dataset, we too observed that both endemic and epidemic KS cases were diagnosed more frequently in men as compared to women The male:female ratio for epidemic KS 1.8 and for endemic cases was 1.7. (Table 1).

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We also want to take this opportunity to highlight that while ART may reduce the incidence of epidemic KS in HIV infected patients, the prevalence and incidence of endemic KS will likely remain high and remain under-reported in the current literature. Countries like Zambia that are a part of the "KS belt" will likely continue to bear the burden of endemic KS. It is anticipated that the decline observed in Western countries, where KS and KSHV infection was not endemic, will not be observed in KSHV endemic countries like Zambia. This is important to investigate because the burden of KSHV infection in sub-Saharan Africa is significantly higher as compared to Western countries where KSHV prevalence is lower. As stated by Bohlius *et al*, the seroprevalence of KSHV in South Africa is 30–50%. Our studies have shown that KSHV seroprevalence in women of childbearing age in Zambia is 40%.[2, 3] A recent study conducted in Cameroon has reported a KSHV seroprevalence of 80% in the general population.[4] Thus, prevalence of KSHV infection in this region is significantly higher as compared to prevalence in US and Europe where it is generally less than 10%.[5] Whether ART alone is sufficient to substantially decrease the incidence of epidemic KS in this region, similar to what has been observed in United States and Europe remains to be determined.

We also believe that the direct comparison of studies conducted in resource rich settings to studies in resource limited settings should be interpreted with caution because the ART coverage and adherence to therapy in HIV infected patients may be vastly different. The authors mention that South Africa's ART coverage of 55% of the HIV infected population is currently the largest. In our dataset, we observe that only 1 in 4 HIV positive patients were receiving ART at the time of KS diagnosis. Therefore, this data underscores the critical need for the majority of HIV infected patients to be covered by ART and also monitored for drug resistance. Therefore, it is quite likely that epidemic KS will remain a major form of HIV-associated malignancy until the issues of ART coverage, adherence and drug resistance viral monitoring have been resolved. In parallel, there is a need to further understand the underlying mechanisms and risk factors associated with development of KS in ART treated HIV infected patients and in KSHV infected HIV negative patients, as seen in Zambia and as reported in the current study.

Yours sincerely,

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Table 1

Characteristics of Kaposi's sarcoma patients diagnosed at Dermatology and Venereology Clinic at UTH, Lusaka, Zambia, 2008 – 2013.

	Epidemic Cases N (%)	Endemic Cases N (%)
Total	460	266
Median Age (IQR)	34 (29–42)	35 (27–45)
Age Group		
<18 years	6 (1.3)	12 (4.5)
18–34 years	229 (49.8)	120 (45.1)
35–49 years	175 (38.0)	80 (30.1)
50 or more	50 (10.9)	54 (20.3)
Gender		
Male	296 (64.3)	166 (62.4)
Female	164 (35.7)	100 (37.6)
ART		
Yes	114 (24.8)	-
No	346 (75.2)	-