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# Evaluation of Plasmodium falciparum malaria as a risk factor involved in human herpes virus 8 (HHV8) infection in Uganda

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**Background.** *Human herpes virus* 8 (HHV-8) is the causal agent of Kaposi's Sarcoma (KS) and it is most prevalent in sub-Saharan Africa, mainly in Uganda, where *Plasmodium falciparum* malaria is a priority in public health and represents one of the most important parasitic diseases. Following primary infection HHV-8 establishes a long life persistent infection and this reflects a delicate equilibrium between viral replication and the host immune responses. The malaria infection could have an impact on HHV-8 reactivation and this suggests that may influence the transmission of Kaposi Sarcoma Associated Herpes Virus (KSHV) in endemic areas.

**Material/methods.** Children and their mothers were enrolled during cross-sectional surveys performed in two different zones of Uganda: Kampala suburbs (Central-Southern Uganda) and in rural sites of Karamoja region (North-Eastern Uganda). Fingerpick blood samples and saliva samples were spotted on Whatman grade 1 filter papers at the time of the field survey and then air dried before being separately stored in sealed plastic containers. From each sample, the presence of *P. falciparum* DNA was investigated by nested PCR-RFLP and the presence of HHV8 DNA was detected by Real Time PCR. Statistical analysis was performed with the application of descriptive methods (means, SD, and percentage) and 95% confidence interval; the association between categorical variables was evaluated through chi-square Pearson test; results were considered significance if $p < 0.05$.

**Results.** We analyzed a sample of 259 children (46.0% male and 49.8% female) with mean age 7.1 (1<13). Positivity for malaria was 36.7% (95% C. I. 31.0 – 42.7), while positivity for HHV-8 was 15.8 % (95% C.I. 9.8 – 24.4). The association between the two infection diseases (chi-square Pearson test) resulted close to the level of statistical significance (p = 0.085).

**Conclusions.** So far our results show some initial evidence that the lower immune response due to malaria infection, affecting the host immune system, could represent a possible risk factor for infection or reactivation of latent HHV-8. Anyway further studies are needed investigating other Africa sub-Saharan countries.