EFFECT OF SCHISTOSOMA HAEMATOBIUM INFECTION ON PLASMODIUM FALCIPARUM MALARIA BURDEN IN LAMBARÉNÉ, GABON

Jean Claude Dejon Agobé,1 Frejus Jeannot Zinsou,1 J Honkpehedji,1 Ulysse Adegnika1. 1CERMEL, Gabon; 2ITM Tübingen, Germany

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Background Malaria remains the first cause of death in Africa. In endemic area, it overlaps with other infections including helminths infections. It has been shown that there are interactions between the two parasites infection. Lambarene is the endemic area for urogenital schistosomiasis, which co-exist with P. falciparum malaria. Therefore, we decide to assess for the first time the effect of schistosomiasis infection on malaria infection burden.

Methods In order to assess the effect of S. haematobium on malaria infection burden, a cross-sectional study was conducted in school children aged 6–16 years old. One blood smear was performed and 3 urine samples were obtained to assess the presence of infections. Chi-square test and generalised linear model were used to compare the risk to be infected by P. falciparum parasite and Mann-Whitney-Wilcoxon test to compare the parasitaemia of P. falciparum. Demographic data was also collected.

Results A total of 741 children were included. The overall prevalence was 20% and 31% for P. falciparum microscopic carriage and S. haematobium infection, respectively. Co-infection of both was found in 65 (9%) participants. S. haematobium and P. falciparum are highly prevalent in PK compared to Bindo and Makouké areas. At univariable analysis, schistosomiasis-infected subjects have an odd of 2.11 [1.46–3.07] to be infected by P. falciparum parasite compared to non-infected subjects. Locality was found to confound the association which remains significant after adjustment for age, gender and locality (aOR=1.69, [1.13–2.59]). The effect of S. haematobium on the P. falciparum parasitaemia outcome was also assessed. There is no effect of Schistosoma infection on malaria parasite density (p-value=0.92).

Conclusions S. haematobium infection increases the risk of being infected with P. falciparum but doesn’t affect the parasitaemia density of P. falciparum malaria in our study population.