ASYMPTOMATIC MALARIA, HIV INFECTION AND THEIR EFFECTS ON ANEMIA AND T CELLS LEVELS IN CHILDREN IN DOUALA, CAMEROON

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INTRODUCTION HIV infection and malaria are priority health issues for sub-Saharan Africa. Both diseases worsen each other through their effect on the immune and the hematological systems. This study aims to determine the effects of HIV infection and asymptomatic malaria on anemia and T cells counts in children.

Method: From May to November 2016,197 HIV infected and 98 HIV free non-febrile children aged 0-19 years (128 male and 167 female) participated in the study. All HIV infected children were receiving antiretroviral treatment and Cotrimoxazole. Malaria diagnosis was performed using Giemsa-stained thick blood film; immunological and hematological parameters were assessed through a flow cytometer and an automated analyzer respectively. Chi-2 or Fisher exact test was used to compare proportions; Mann-Whitney and Anova tests for means. Statistical significance was set at p<0.05.

Results:

- Malaria prevalence in the population = 8.8%; Anemia Prevalence in the population = 40.7%.
- No significant association between malaria parasitemia and $CD8^{+}$-T cell levels (P=0.41).
- Anemia was higher in HIV positive children (0.019)

References

World Health Organization (2018). World Malaria Report 2018. WHO, Geneva.

UNAIDS (2020). Global HIV & AIDS statistics – 2020 fact sheet.

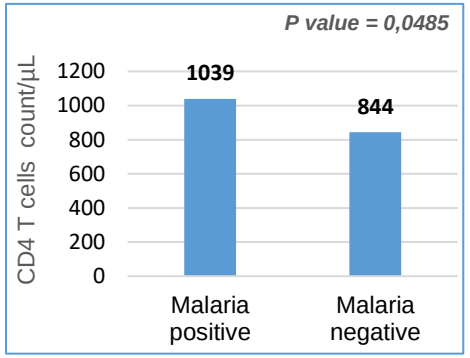

Fig. 1: CD4 T cells in relation with malaria in both HIV+ and HIV-

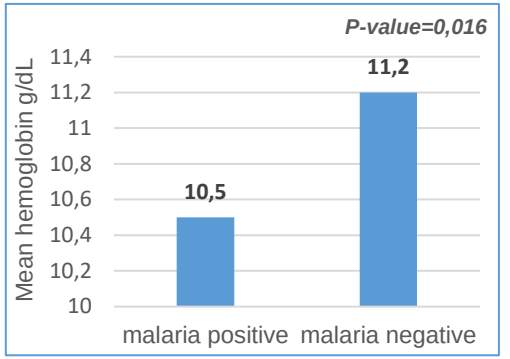

Fig. 2: Hemoglobin concentration in relation with malaria infection

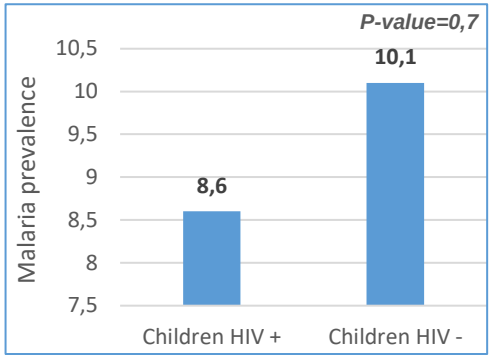

Fig. 3: malaria prevalence in relation with HIV status

Table 1. Anemia in relation with age group, HIV status and immunodeficiency

Characteristic		Anemia		Chi-2	p-value
		No	Yes		
Age group	<6 years	42 (47.2%)	47 (52.8%)	9.593	0.0083*
	[6-12] years	80 (61.1%)	51 (38.9%)		
	>12 years	53 (10.7%)	22 (29.3%)		
HIV status	Negative	68 (69.4%)	30 (30.6%)	5.553	0.0185*
	Positive	107 (54.3%)	90 (45.7%)		
Immunodeficiency	Severe	7 (36.8%)	12 (63.2%)	13.795	0.001*
	Moderate	35 (46.1%)	41 (54.0%)		
	Not significant	133 (66.5%)	67 (33.5%)		

Conclusion: Asymptomatic malaria may enhance CD4+-T cells. Both malaria and HIV infection lead to drop in hemoglobin levels. The HIV treatment protocol may reduce malaria prevalence.

Prevention of malaria and appropriate management of anemia are necessary to improve the health condition of HIV-infected children and decrease malaria related morbidity and mortality.