Epidemiology

PO - (8571) - CYTOKINE PROFILE IN ASYMPTOMATIC SCHOOL CHILDREN CO-INFECTED WITH HELMINTH AND PLASMODIUM FALCIPARUM IN IBADAN, SOUTHWEST, NIGERIA

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Background: Intestinal helminths and malaria are among the most prevalent infectious diseases in the tropics. The effect of coinfections on immune response is not clearly understood. We therefore investigated the immune response profile in children with and without symptoms.

Methods: A total of 78 afebrile school children (20 helminth-malaria co-infected, 17 helminth infected, 19 malaria infected and 22 uninfected) and 75 febrile children (14 helminth-malaria co-infected, 16 helminth infected, 20 malaria infected and 25 uninfected) were recruited into the study. Helminths were screened using Kato Katz method while malaria parasite screening was done using Giemsa-stained thick blood films. Circulating TNF-α, IFN-γ, IL-1, IL-10 and IL-6 concentrations were assessed by ELISA from serum samples. Data were analysed using analysis of variance.

Results: Among the afebrile school children, IL-10 was significantly increased in helminth infected children compared with helminth-malaria co-infected, malaria infected and uninfected groups (p<0.05). IFN-γ was significantly elevated in malaria and malaria-helminth coinfection relative to helminth alone (p<0.05). IL-1 level was significantly higher in single infection of helminth and malaria relative to coinfection and the uninfected groups (p<0.05). An insignificant difference was observed for IL-6 and TNF-α concentrations across all the four groups while among febrile children, IL-6 was significantly increased among helminth alone and helminth-malaria coinfection relative to malaria infected group (p<0.05). IL-10 was significantly elevated in co-infected group compared with helminth or malaria infected group while TNF-α was significantly increased in helminth and helminth-malaria coinfection compared with uninfected or malaria infected group (p<0.05). IFN-γ level was insignificant in the infection groups relative to uninfected group (p<0.05). IL-1 level similar across the groups.

Conclusion: Helminth infection seem to upregulate Th2 immune response among children with symptomatic uncomplicated malaria while there was no significant changes in Th immune response among afebrile children.