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Abstract (publication only)

IgG antibody response to Plasmodium falciparum schizont extract

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Background: Schizont extract can be obtained from malaria culture using each plasmodium falciparum isolate and also can be used as a fast and easy method to evaluate the immune response against malaria. The current study aimed to evaluate the age dependent immune response against crude schizont extract. Materials and Methods: Age-dependent immunity was analysed testing the sera of 179 individuals, randomly selected from the Keneba Serum Collection using crude schizont extract. Cultivation of the erythrocyte stages of *P. falciparum* was done according to the technique of Trager and Jensen. Crude schizont extract was obtained using centrifugation methods. Schizonts were concentrated from culture either by using the plasmagel flotation technique or the Percoll gradient technique according to modification of methods described by Kramer and Lambros & Vanderberg. Total IgG and IgG subclasses were measured using ELISA. Data were analyzed using Spearman correlation method, ANOVA and Post hoc analyses methods. Results: About 78% of the individuals within all age groups had IgG responses to schizont extract with the mean OD values above the cut-off. 66% of individuals whose IgG responses to the schizont extract were below the cut-off belonged to the 0-5 year ages and only 2.5% belonged to the age group 51+. About all individuals in age group 16-30 and 91% of those in age group 51+ showed IgG responses higher than background to schizont extract. The correlation between age and OD values to schizont extract was positively significant [$r=0.296$ and $P<0.01$]. Conclusion: Most sera strongly recognized the crude schizont extract in an age dependent manner while these responses were associated with an increase in haemoglobin levels and a decrease in parasitaemia, suggesting that IgG response to crude schizont extract may be a useful mean for further studies of protective immunity against plasmodium falciparum.