

Differences in cytokine profile of uncomplicated *Plasmodium falciparum* and *Plasmodium vivax* malaria in Sri Lanka

Blood was collected in 0.1% EDTA bottles at room temperature, spun at 2000 rpm. For minutes. Plasma was separated and frozen at -70° C until. The plasma levels of IL-10, IFN-gamma, IL-4 and TNF-alpha were measured by commercially available ELISA kits (BIOSOURCE INTERNATIONAL) and plasma IgE levels were assayed at the University of Stockholm by an ELISA. Percentage parasitaemia derived by counting the number of infected erythrocytes in 1000 microscopic fields and expressing it as a percentage of total erythrocytes.

According to our results percentage parasitaemia was significantly higher in uncomplicated *Plasmodium falciparum* patients compared to *Plasmodium vivax* patients ($p=0.010$). There were no significant differences in clinical score, days of symptoms, and number of past malarial infections between uncomplicated *Plasmodium falciparum* patients and *Plasmodium vivax* patients.

Plasma IL-10, plasma TNF-alpha, plasma IgE, and plasma IgG levels were significantly higher in *Plasmodium vivax* patients compared to uncomplicated *Plasmodium falciparum* patients ($p=0.000$, $p=0.001$, $p=0.029$, $p=0.001$ respectively). There were no significant differences in plasma IL-4, and plasma IFN-gamma levels ($p= 0.155$, 0.436 respectively) between uncomplicated *Plasmodium falciparum* patients and *Plasmodium vivax* patients.

This study emphasize that *P. vivax* can cause febrile and paroxysmal episodes at a much lower parasite density than does *P.falciparum*. Cytokines associated with the pathogenesis of malaria such as IL-10, TNF-alpha and IgE are significantly higher in *P. vivax*.

This could be because clusters of *P.falciparum* schizonts can sequester in vessels of internal organs and parasites are not present in the peripheral blood continuously and thus unable to stimulate as many lymphocytes as *P. vivax* to produce cytokines. Is it possible that these cytokines play a protective Nutritional status in children with malaria.