## A-41: Plasma cytokine levels in severe complicated *Plasmodium falciparum* malaria

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Pathogenesis of *Plasmodium falciparum* malaria may depend on many factors. Cell mediated immune responses and cytokines are probably involved in the pathogenesis of severe malaria. The objective of this study was to find whether there is an association between plasma cytokine levels and disease severity.

We measured plasma levels of IFN-gamma, TNF-alpha, IL-2, IL-6 and IL-10 in patients with uncomplicated (UC), Multiple Organ Dysfunction Syndrome (MODS), Cerebral (CM) *P. falciparum* malaria.

MODS patients had significantly higher levels of IL-6, IL-10, and TNF-alpha levels compared to the UC patients $p<0.000$, $p=0.0037$, $p<0.000$ respectively. Mean levels of IL-6, IL-10 and TNF-alpha in MODS category were 230, 97.8, 154.7 pg/ml respectively and in UC category 108.5, 50.78, 40.3 pg/ml respectively. There was no significant difference in plasma IL-6, IL-10 and TNF-alpha levels between the 2 categories of severe falciparum patients, MODS and CM. IL-2 in plasma was not detectable. Plasma IFN-gamma levels were not significantly different between the UC and severe patient categories.

These results suggest that cytokines such as IL-6, IL-10 and TNF-alpha may be involved in pathogenesis of severe *P. falciparum* malaria or could be markers of severe disease.