A-28 Study of *in vitro* effects of factors associated with clinical disease in *P.vivax* malaria

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That plasma taken during the peak of a *P.Vivax* paroxysm inactivates gametocytes of *Plasmodium* rendering them non-infective to mosquitoes has been previously demonstrated. These effects are due to soluble mediators of host (TNF-alpha and IL-2) and parasite origin (a schizont stage antigen) acting on host cells and implicating them in the mechanisms underlying a paroxysm with which this event coincides. In this study, the effects of malaria infection plasma, on 2 continuous human cell lines,umbilical vein endothelial cells and melanoma cells, by culturing the cells at 37°C in a medium containing test and non-malarial plasmas, have been tested. Compared to controls, all of the plasma samples

from 8 patients tested for their ability to metabolize a chemical dye (MTT) showed an inhibition of oxidative phosphorylation (OP) in these cells when assessed after 3 h in culture. After 24h in culture, cells grown in malaria plasma had regained their ability to metabolize MTT, as well as those grown in control plasma, indicating that inhibition of OP of these cells was transient. This effect was seen in plasma taken both during and between paroxysm,and was not reversed by the addition to the malarial plasma, of antibodies against either (i) TNF-alpha or IL-6, even in combination or (ii) a parasite schizont extract. Neither was the OP-inhibition elicited by the addition of recombinant cytokines TNF-alpha or IL-6, or of a parasite extract to normal plasma, even in combination.

Conclusion: Mediators of the transient interference with OP comprise molecules other than either of these 2 cytokines or those of parasite origin.

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