A-25 Cytoadherence properties of *Plasmodium falciparum* -infected erythrocytes in relation to severity of clinical disease and parasite density in uncomplicated malaria in Sri Lanka

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The binding of Infected erythrocytes (IE) to endothelial cells through receptors such as ICAM-1 and CD36 has been implicated in pathogenesis of *falciparum* malaria, and the ability to do so was shown to be variable in different parasite strains. In this study, adherence of IE to ICAM-1 and CD36 was investigated using 2 CHO cell lines that express either CD36 or ICAM-1 on the surface. *P.falciparum*-infected blood from uncomplicated patients, having >0.3% ring-parasitaemia were cryopreserved. A clinical evaluation of every patient was made using a questionnaire by which the degree of severity of each of 11 symptoms were scored; the total clinical score (TCS) was taken as a measure of the clinical severity. Parasite isolates were cultured *in vitro* till trophozoite/ schizont stage, and rosette formation and adherence to CHO-ICAM-1 and CHO-CD36 cells were assessed.

Adherence of IE to CHO-ICMA-1 cells was significantly correlated with adherence to CHO-CD36 cells ($p=0.01$; $r=0.4$). No such correlation was found between adherence to either ICAM-1 or CD36 rosetting. Adherence of IE to ICAM-1, but not to CD36, was significantly and positively correlated with both the TCS and parasitaemia (multiple regression analysis, $p=0.05$ & $p<0.001$ respectively), while there was no significant correlation between the TCS and parasite density themselves. The correlation between binding to ICAM-1 and severity of clinical symptoms may reflect a causative role of the former in the pathogenesis of uncomplicated malaria. Alternatively, binding to ICAM-1 may have been a marker of other independent phenomena such as cytokine induction in uncomplicated malaria.