malaria.

A-20: Transient increase in circulating gamma-delta T-cells during *P. vivax* malarial paroxysms

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The percentage of peripheral blood mononuclear cells (PBMC) bearing the CD3+ phenotype and the alpha-beta and gamma-delta T- cell receptors (TCR) in peripheral blood mononuclear cells were examined in P. vivax malaria patients and convalescents; the cells were labelled with monoclonal antibodies, stained with either fluorescene or phycoerythrin and examined by UV microscopy. A highly significant increase in both the proportion and the absolute numbers of gamma-delta T-cells ($p < 0.005$ and < 0.001 respectively) was observed in non-immune *P. vivax* patients during clinical paroxysms compared to non-malaria controls. These T-cells which normally constitute not more than 3-5% of peripheral blood mononuclear cells, constituted upto 30% of PBMC during paroxysms in these non-immune patients, in whom the clinical symptoms were severe. A less significant increase of gamma-delta T-cells were also observed in these non-immune patients during infection, between paroxysms and during convalescence. In contrast, in an age-matched group of semi-immune patients resident in a malaria endemic region of the country, in whom the clinical disease was comparatively mild, there was no increase in gamma-delta T-cells either during infection, even during paroxysms, or convalescence. The severity of disease symptoms in patients as measured by a clinical score, correlated positively with the proportion of gamma-delta T-cells in peripheral blood ($r = 0.53$,

$p < 0.01$) the most significant correlation being found between the prevalence and severity of gastrointestinal symptoms, nausea, anorexia and vomiting and the proportion of gamma-delta T-cells ($r = 0.49$, $p = 0.002$). These findings suggest that gamma-delta T-cells have a role to play in the pathogenesis of malaria, possibly in the general constitutional disturbances and particularly in gastro-intestinal pathology in malaria.