MALARIA IN PREGNANCY AND ROLE OF REGULATORY T CELLS (CD4+CD25-IL10+) IN GHANAIAN MOTHERS

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Abstract

Introduction: The T-cell subset (CD4+Tregs) play a significant role in immunoregulation, by active suppression of the immune system, through cell-to-cell contact and the secretion of IL10. The frequencies of these cell subpopulations were investigated in the mother. **Methods:** The study recruited 61 mothers out of this number, 31 mothers with *plasmodium* parasitized placentas and 30 mothers without *plasmodium* infection. Placental malaria positivity was determined by PCR and microscopy. Peripheral mononuclear cells (PBMCs) were isolated from peripheral blood, cultured in the presence of VAR2CSA antigen, and stained with antibodies (CD3, CD4, CD25, and IL-10), before cytometry analysis. **Results:** The CD4+CD25+ T cell frequencies were significantly higher in all the participants ($p<0.0001$), and comparable across gravida. These cell populations were similar when compared between primigravid and secumgravida mothers ($p=0.77$), and between multigravida and secumgravida mothers ($p=0.84$). Primigravid mothers with placental malaria had significantly higher frequencies of CD4+CD25+ T cell population ($p=0.04$). The frequencies of CD4+IL10 were significantly high in both primigravid and multigravid mothers who were placental malaria positive ($p=0.03$) and ($p=0.04$) respectively. Conclusion: Induced Tregs (CD4+IL10) cells could play a role in placental malaria susceptibility due to an increase in their populations in mothers with plasmodium-infected placentas.

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