

Abstract

There is longstanding evidence for a role of immunoglobulin (Ig)G in protection against malarial disease and infection. IgG1 and IgG3 have been shown to be particularly efficient at associating with monocytes in potentially protective mechanisms (i.e. antibody-dependent cellular inhibition, opsonization and phagocytosis). Conversely, there is some evidence that IgG2 (and possibly IgG4) antibodies may be antagonistic to this protection. The protective effect of IgG subclass antibody activity present before the beginning of a malaria transmission season (preseason antibody levels) against severe malaria has not been tested in longitudinal studies. We measured IgG class and subclass antibody levels specific to crude *Plasmodium falciparum* lysates by enzyme linked immunosorbent assay in a case-control study of 76 children on the coast of Kenya. The mean optical density values for both IgG class and subclass antibodies were not significantly different between the children who developed severe malaria and those who remained healthy during an observation period of two malaria transmission seasons. However, elevated levels of IgG1 in relation to levels of IgG2 and IgG4 antibodies were associated with protection from severe malaria ($P = 0.02$). Conversely, elevated levels of IgG2 in relation to IgG1 and IgG3 antibodies were associated with a higher risk of developing severe malaria ($P = 0.006$).