2° Congresso Nacional de Medicina Tropical (Lisboa, Portugal)
20-23 April 2013

Title:

Human antibody response to *Anopheles* mosquito bites as indicator of malaria vector control effectiveness

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Abstract:

For improving malaria vector control, immunological marker based on human antibody responses to *Anopheles* saliva has been investigated as a new indicator to compare and evaluate the efficacy of different vector control methods, such as insecticide-treated nets (ITNs), impregnated wall lining (WL) and insecticide residual spraying (IRS). Parasitological, entomological, and immunological assessments were carried out in children from 2 to 9 years old from a malaria-endemic region, Balombo (Angola) before and after the introduction of vector controls. Immunoglobulin G (IgG) levels to *An. gambiae* saliva were positively associated with the intensity of *An. gambiae* exposure and malaria infection. A significant decrease in the anti-saliva IgG response was observed after the introduction of ITNs, and this was associated with a drop in parasite load and density of *Anopheles* vectors. This study confirms the efficacy of such immunological marker for tailor-made vector control strategies.