

Abstract

To provide advice on the rational use of antimalarial drugs, Médecins Sans Frontières conducted a randomized, an open label efficacy study in Kajo Keji, an area of high transmission of malaria in southern Sudan. The efficacy of chloroquine (CQ), sulphadoxine-pyrimethamine (SP) and amodiaquine (AQ) were measured in a 28-day in vivo study, with results corrected by PCR genotyping. Of 2010 children screened, 115 children aged 6-59 months with uncomplicated *Plasmodium falciparum* malaria were randomized into each group to receive a supervised course of treatment. Of these, 114, 103 and 111 were analysed in the CQ, SP and AQ groups, respectively. The overall parasitological failure rates at day 28 were 93.9% [95% confidence interval (CI) 87.3-97.3] for CQ, 69.9% (95% CI 60.0-78.3) for SP, and 25.2% (95% CI 17.7-34.5) for AQ. These results provide important missing data on antimalarial drug efficacy in southern Sudan. They indicate that none of the drugs could be used in monotherapy and suggest that even in combination with artemisinin, cure rates might not be efficacious enough. We recommend a combination of artemether and lumefantrine as first-line treatment for uncomplicated *P. falciparum* malaria cases in Kajo Keji county.