

What's New

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◆ *Ann Hematol.* 2008 Nov 20

Effects of chloroquine treatment on circulating erythropoietin and inflammatory cytokines in acute *Plasmodium falciparum* malaria.

Anemia is a common and serious complication of malaria due to *Plasmodium falciparum* infection, a major health problem in tropical areas. Herein, the relation was investigated between the levels of circulating erythropoietin (EPO) and immunomodulatory cytokines in response to chloroquine treatment. Thirty-seven healthy control subjects and 40 patients with acute *P. falciparum* infection were included in the study. All subjects were adult male Sudanese. Blood samples were collected before chloroquine administration (25 mg/kg body weight, orally on three consecutive days) and 3 and 30 days after start of the therapy. Measurements included routine hematological parameters and the concentrations of immunoreactive EPO, tumor necrosis factor-alpha (TNF-alpha), interleukin 1alpha (IL-1), IL-6, and interferon gamma (INF-gamma). Chloroquine treatment led to a decrease in EPO levels in the control subjects but an increase in malaria patients at day 30. The latter was likely due to the anti-inflammatory action of the drug because INF-gamma, IL-1, and IL-6 concentrations declined on chloroquine treatment. Based on these findings, the authors propose that an impaired EPO production in association with a prolonged elevation of certain inflammatory cytokines can contribute to the anemia in some malaria patients which can be reversed by chloroquine therapy.

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◆ *Molecules.* 2008 Nov 20;13(11):2900-7.

Ferroquine, an ingenious antimalarial drug: thoughts on the mechanism of action

Ferroquine (FQ or SR97193) is a novel antimalarial drug candidate, currently in development at Sanofi-Aventis. In contrast to conventional drugs, FQ is the first organometallic drug: a ferrocenyl group covalently flanked by a 4-aminoquinoline and a basic alkylamine. FQ is able to overcome the CQ resistance problem, an important limit to the control of *Plasmodium falciparum*, the principal causative agent of malaria. After fifteen years of effort, it is now possible to propose a multifactorial mechanism of action of FQ by its capacity to target lipids, to inhibit the formation of hemozoin and to generate reactive oxygen species.

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