

TREATMENT OF THE ACUTE ATTACK OF MALARIA CAUSED BY  
*Plasmodium falciparum* : RESULTS WITH  
MEFLOQUINE AND WITH QUININE

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OBJECTIVE : To determine the effect of several therapeutic regimens upon *P. falciparum* asexual parasitemia in naturally infected humans.

BACKGROUND : Mefloquine hydrochloride has been shown to be an effective drug in the therapy of infections due to *P. falciparum*. In particular, when given as a single oral dose of 1500 mg., it has resulted in a 100% cure rate in 37 patients treated by Doberstyn et al., (1), 8 by Trenholme et al., (2) and 35 treated by Hall et al., (3) who used a short course of quinine (average 2 grams base over 4 doses) before starting the mefloquine. In another study (4), Hall et al. report a cure rate of 94% (29/31) with 1500 mg of mefloquine. The present study differs little in methodology from previous studies, but was conducted using patients who acquired their malaria in an area of fansidar resistant *P. falciparum*. Patients treated with quinine were used as a control group.

METHODS : This study is being carried out as a companion effort to that dealing with Fansidar treatment of falciparum malaria, the results of which are described elsewhere in this annual report. The conditions and methods of patient selection are described in that report. Patients covered in this report were assigned to one of the following therapeutic regimens :

1. Mefloquine hydrochloride, single dose, 1500 mg. p.o.
2. Quinine sulfate, 650 mg. p.o. Tid x 7-10 days.

RESULTS : Thirty-seven patients were treated with a single 1500 mg. dose of mefloquine. Thirty-six responded well and one had RI resistance (Table 1). The latter patient recrudesced on day 13 and was later shown to have had serum mefloquine levels on day 0, 1 and 3 that were even higher than normal volunteers given the same dose (5). Compared to the patients who responded well to mefloquine, the resistant case had a shorter fever clearance time (20 hours vs. a mean of 37 hours), but a longer parasite clearance time (94 hours vs. a mean of 66 hours).

Seven patients were treated with 650 mg quinine Tid for 10 days. One was lost to follow-up, the others responding well (Table 1). Thirty-six were treated with 650 mg quinine Tid for 7 days. Sixteen were excluded from analysis because they were either lost to follow-up or there was reason to doubt they had received a full dose of active quinine. Of the remaining 20, 13 were sensitive,

one was resistant (RII) and 6 became parasitemic before day 28, but only after spending at least a week in an area of high malaria transmission, making it impossible to exclude reinfection. The mean PCT was 91 hours and the mean FCT was 50 hours. The case of RII resistance had a parasitemia on admission of 57,246/cu. mm. which decreased to 20/cu. mm. on day 7. On day 8 he was treated with mefloquine and had no detectable parasitemia on day 10. Quinine levels taken on day 1 and on day 7 suggested that full doses of quinine had been recently ingested.

In summary, both mefloquine and quinine worked quite well, with only one case of resistance in each group. Mefloquine has the advantage of a single dose administration and a more rapid PCT and FCT, but is not commercially available at this time.

Table 1. Results of Treatment of Falciparum Malaria with Mefloquine and with Quinine in Patients for Whom Complete Data is available

Drug	Number of Patients	Result of Therapy				Percent Sensitivity
		S	RI	RII	RIII	
Mefloquine	37	36	1	-	-	97%
Quinine	20	19	-	1	-	95%

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