

The Suppression of *Plasmodium falciparum* and *Plasmodium vivax* Parasitemias by a  
Dapsone — Pyrimethamine Combination

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**INTRODUCTION:** Combinations of sulfones with pyrimethamine have been shown not to be effective in the treatment of persons clinically ill with chloroquine—resistant falciparum parasitemias. There is little information about the performance of these combinations in the long—term suppression of such parasitemias.

**OBJECTIVE:** To study the effectiveness of a combination of dapsone 100 milligrams and pyrimethamine 12.5 milligrams in suppressing parasitemias in an area endemic for chloroquine—resistant *P. falciparum* and for *P. vivax* malaria.

**DESCRIPTION:** This study was carried out over a seven—month period in two villages in Prachinburi Province, Northeast Thailand. Four hundred and fifty randomly selected villagers 10 years of age or older were assigned to one of three medication groups. These groups were comparable in number, median age, proportion of males (Table 1), and later, in number and type of study dropouts (Table 2). Subjects received weekly, under a double—blind design, either dapsone, 100 milligrams, and pyrimethamine, 12.5 milligrams, or dapsone—pyrimethamine plus chloroquine, 300 milligrams of base, or chloroquine alone. Each subject was visited weekly, at which time medication was administered, capillary blood for thick—thin malaria smears obtained, and a history of illness since the previous visit taken.

**PROGRESS:** Four hundred and ten subjects (91 %) completed the 25—week course of medication. Preliminary data compilation (Table 3) suggests that falciparum attack rates of the groups receiving dapsone—pyrimethamine, with or without chloroquine, were three to four—fold less than the attack rate of the group receiving chloroquine alone. The number of weekly positive smears in the former groups was six to eight—fold lower than in the group receiving chloroquine alone. When slide reading is complete, weekly infection rates will be studied to determine patterns of breakthrough. Further data analysis will also reveal whether the parasite densities and/or illnesses experienced by the three study groups were different. Vivax infection rates were 0.0% in Group 1, 2.8% in Group 2, and 0.7% in Group 3.

**SUMMARY:** Weekly dapsone—pyrimethamine, with or without chloroquine, appears to effectively suppress falciparum infections in an area endemic for chloroquine—resistant strains of the parasite.

Table 1.  
Initial Comparability of Study Groups

Group	Number Subjects	Median Age (Years)	Proportion Males
1 (dapsone-pyrimethamine, chloroquine)	156	24.0	0.48
2 (dapsone-pyrimethamine)	152	27.0	0.56
3 (chloroquine)	142	28.0	0.49

Table 2.  
Comparability of Study Dropouts

Group	Number Beginning	Number Dropouts	Number Completing	Reason for Dropout
1	156	14	142	Moved 11, Refused 3
2	152	14	138	Moved 11, Refused 3
3	142	12	130	Moved 11, Refused 1

Table 3.  
Falciparum Attack Rates and Number of Parasitemic Episodes in Subjects Completing Study, by Group

Group	Number Subjects	Number (%) Infected	Number Episodes Parasitemia (Avg.)*
1	142	25 (17.6)	68 (2.7)
2	138	20 (14.5)	49 (2.5)
3	130	71 (54.6)	393 (5.7)

\* Based on 26 blood films from each subject