

Title: Field Trial of DDS plus Chloroquine—Primaquine as Malaria Prophylaxis

Principal Investigator: Phillip E. Winter, MAJ MC

Associate Investigators: Richard Auerbach, CPT MC*
Albert Nault, CPT MC**
M.R. Lewis, CPT MSC***

Period of Report 1 April—15 September 1966

Objective: To evaluate the efficacy of 4.4 diamino-diphenyl sulfone (DDS) in combination with standard chloroquine-primaquine in the prevention of malaria in U.S. Army personnel.

Description: Company C of the 538th Engineer Bn, camped and working in a malarious area south of Korat was studied. Personnel of the company were assigned to control or study group within the company, based on ASN terminal digit. The study group received a daily dose of 25 mgm DDS. The control group received a placebo identical to the DDS tablet, daily. Both groups were maintained on routine weekly doses of combined chloroquine-primaquine. Thick and thin blood films were obtained from each man prior to entry into the study and at monthly intervals thereafter. Dispensary personnel obtained similar films from individuals reporting on sick call with symptoms of fever, headache, backache and diarrhea. All films were stained with Giemsa and examined by personnel of SMRL. Records were kept of patients with clinical malaria or asymptomatic parasitemia, and results evaluated 6 months after initiation of the study.

Comment: This group of approximately 150 men was followed through the rainy season, when malaria cases were most likely to occur. A survey of indigenous civilians living in the area of the camp indicated that about half had P. falciparum infections, and that half of these were chloroquine resistant. During the period of study the malaria attack rate in the civilian population of the area was estimated to be 650/1000/annum. In the Royal Thai Army camp adjacent to the study group the attack rate was 300/1000/annum.

In this highly malarious setting, the U.S. Army engineer camp was a model of malaria discipline. The men lived in well-constructed screened barracks, and slept under bed nets. Underbrush was cleared in a wide radius around the camp. The camp was fogged with insecticide each night. An early curfew was imposed, to insure minimal exposure to the peak biting hours of Anopheles balabacensis, the presumed vector in the area. In addition to these measures, chloroquine-primaquine prophylaxis was employed.

Results: No cases of clinical malaria and no cases of asymptomatic parasitemia were noted in either control or study group. The study was accordingly terminated on 15 September 1966, although surveillance over the area has been maintained.

Summary: No cases of malaria were detected in a 6 month period in a U.S. Army Engineer Company, one-half of whom received daily DDS in addition to weekly chloroquine-primaquine, and one-half of whom received chloroquine-primaquine plus placebo. Malaria discipline in this group was rigorously enforced, and probably accounts for the absence of the disease in what must have been a highly malarious setting. Evidence as to the efficacy of DDS and/or chloroquine-primaquine as prophylaxis cannot be obtained from this data.

* Preventive Medicine Officer, 9th Logistical Command (B)

** Surgeon, 538th Engineer Bn.

*** Preventive Medicine Officer, 538th Engineer Bn.