

Gastrointestinal Absorptive Function, Quinine Absorption, and Parasite Response in
Acute Falciparum Malaria

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INTRODUCTION : Persons ill with acute falciparum malaria sometimes present with gastrointestinal symptoms, of which anorexia, nausea, and vomiting are the most common. Gastrointestinal absorptive function has been shown to be abnormal in patients with acute falciparum malaria. Olsson and Johnston found impaired d-xylose absorption and histopathologic changes in intestinal biopsy specimens taken from malarious American soldiers. These observations were extended by Karney and Tong using additional indicators of absorptive function. In neither of the above studies were levels of orally-administered antimalarial drugs and parasite responses measured or correlated with absorptive function.

OBJECTIVE : To measure concurrently and correlate gastrointestinal absorptive function, antimalarial drug levels, and parasite responses in patients ill with acute falciparum malaria, to determine whether malabsorption in malaria has any clinical significance.

DESCRIPTION : Two groups of patients will be included, a falciparum infected Study Group and an uninfected Control Group.

(1) *Study Group* : Twenty male patients admitted to Trad Provincial Hospital and assigned to the Quinine Group of the WR 30090 protocol will be studied. The course of hospitalization and procedure sequence will be modified to include the d-xylose absorption studies and collection of specimens for serum quinine and serum carotene determinations. The d-xylose test will be performed on each Study Group subject twice during hospitalization, on days 1 and 6. A serum specimen for serum carotene determination will also be collected on day 28. A single stool specimen collected during hospitalization will be studied for ova and parasites.

(2) *Control Group* : Twenty male patients admitted to Trad Provincial Hospital with diagnoses other than malaria or those involving the gastrointestinal or urinary tracts will be studied. Demographic data on these subjects will be taken and they will be administered the d-xylose test once, on day 1 of hospitalization. The subject selected will be the next acceptable, willing admission following the admission of the "Study Group" patient. A single stool specimen collected during hospitalization will be studied for ova and parasites.

PROGRESS : To date, sixteen patients ill with acute falciparum malaria treated with quinine sulfate, (Study Group), and twelve patients with diagnoses other than malaria (Control Group) have been studied. When twenty patients in each group have been studied, the similarity of the Study and Control Groups will be tested by comparing the median ages, and by comparing other demographic variables of interest such as marital status and place of residence. Days 1 and 6 d-xylose and serum carotene test results in the Study Group will be compared and contrasted to those of the Control Group. The degree of relationship of d-xylose absorption, serum carotene levels, plasma quinine levels, and parasite responses will be measured by calculation of correlation coefficients.