ABSTRACT

Malaria is still playing its role as a major challenge to health care systems in tropical countries mainly due to resistance development. Resistance to previous generations of artemisinins finally lead to the introduction of Artemisinin derivatives as the first line treatment of falciparum malaria in the 90s. The primary aim of this study is to clarify the relation of clinical finding and *in vivo* treatment results and *in vitro* drug sensitivity data with special reference to artemisinin.

The study was conducted at Hospital of Tropical Diseases from June 1999 – January 2000. This is an observational study based on *in vivo* and *in vitro* data acquired from patients included in clinical controlled trials. Patients admitted to the Bangkok Hospital for Tropical Diseases for treatment of falciparum malaria in the course of phase-II and phase-III clinical trials. Informed consent was obtained. The patients aged are 14-65 years old, both genders, positive for *P.falciparum* from blood smear and 28 days follow-ups feasible were included in the study. Other plasmodia infection, pregnancy or lactation and history of antimarial drug intake prior to admission were excluded. Demographically data, history with special reference to travel, previous malaria infection and current complaints are recorded in the CRF on admission. Temperature and parasite count are assessed every 6 hrs, gametocyte count every 24 hrs and FCT, PCT and GCT were calculated there after. Patients were treated with artemisinin derivatives in combination with other drugs according to individual study protocol. Recrudescence within 28 days is recorded and in vivo sensitivity level assessed. Drug sensitivity tests follow WHO standard methodology for the assessment of schizont maturation inhibition were performed. The blood was taken from each patient and mixed with RPMI1640 medium a dilution of 1 to 19 and applied to each well of microtiter plates, with ascending concentrations of artemisinin (0.15 to 150 pmo/well). Plates were incubated in candle jars at 37.5 ° c for 24 hrs. BMM mixture is transferred to microscopically slides and Giemsa stained.Evaluation is done by counting the number of schizonts with three or more nuclei out of a total of 200 asexual parasites relative to the control well and expressed as effective

concentrations. Log-probit analysis of regression will be used to evaluate *in vitro* drug sensitivity testes. Correlation of clinical response parameters and *in vitro* response parameters were evaluated by median and non- parametrical analysis (Spearman) .

28 cases were success in study. Most was middle aged mans and labor. The area of highest number of residence or origin infection was Kanchanaburi. The most patient presented with headache, weakness, chill, fever, vomiting, nausea and had recrudescent 4 cases were treated with artemisinin with primaquine and 3 cases with artemisinin with doxycycline. Only fever clearance time *in vivo* and EC (50,90) rs=0.611 was correlated. No side effects were found in this study. The different drugs no had dependent with correlation of fever clearance time but the different drugs had dependent with of parasite clearance time. In conclusion recrudescence rate is higher among the patients treated with artemisinin alone comparing to a combination drug regimen.

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