

Thesis Title Compliance and Cost-effectiveness Analysis of Artesunate and Quinine Tetracycline for the Treatment of Patients with Uncomplicated *Falciparum* Malaria in Chanthaburi, Thailand

Name Elsie R. Honrado

Degree Master of Science (Medical Epidemiology)

Thesis Supervisory Committee

Wijitr Fungladda, M.D., D.T.M.&H., Dr.P.H.

Pirom Kamolratanakul, B.Sc., M.D., M.Sc.

Dwip Kitayaporn, M.D., D.T.M.&H., Dr. P.H.

Juntra Laothavorn, M.D., D.T.M.&H.,

Grad. Diploma in Clin. Sc. (Med.), Ph.D.

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**ABSTRACT**

**Objectives :**

To compare compliance to the 5-day 700 mg oral artesunate and the 7-day quinine-tetracycline (O7T7) regimens and their cost-effectiveness (providers'

perspective) based on curative effectiveness for the treatment of uncomplicated falciparum malaria in the field.

**Methods** :

Randomized, controlled, clinic-based field trial using patient interview and residual pill count to assess compliance. One hundred thirty-seven patients, aged 15-60 years attending a malaria clinic in Chanthaburi, Thailand, were followed for 28 days. Seventy-seven patients received artesunate; while, 60 received Q7T7. Compliance and cure rates were evaluated on Day 5 (artesunate group) and Day 7 (Q7T7 group). Cost-effectiveness and sensitivity analyses were done varying the curative effectiveness and cost of artesunate using the intention-to-treat approach.

**Results** :

Compliance rate to artesunate was higher (98.4%) than Q7T7 (71.7%) (relative risk adjusted for sex [aRR] = 1.4 (95% C.I., 1.15-1.68, referent: Q7T7). The reasons for compliance included one or a combination of the following: desire to be cured (76.5%), heeding the advice of the malaria staff (71.4%) or the employer (3.1%) and ease of administration (2.0%); while noncompliance was mostly due to adverse reactions (37.5%) and forgetting to take the drugs (25%). The cure rate in artesunate (100%) was found to be 32 % higher than in Q7T7 (77.4%) (aRR = 1.32, 95% C.I., 1.12-1.55).

Cost-effectiveness analysis revealed that artesunate is more cost-effective than the Q7T7 if the costs of artesunate/50 mg tablet  $\leq$  9.00 baht (0.36 US\$), quinine = 1.50 baht(0.06 US\$)/300 mg capsule, and tetracycline = 0.44(0.0176 US\$)/250 mg capsule.

*Conclusions/Recommendations :*

The higher compliance rate, higher cure rate and higher cost-effectiveness of the 5-day 700 mg oral artesunate observed in this study provide us grounds to recommend its use in lieu of the standard O7T7 for the treatment of uncomplicated falciparum malaria in the field clinics in Thailand.