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The prevalence of thalassemia is high in Southeast Asia, where Artemisinin derivatives are commonly used in the treatment of malaria. It has been previously reported that artemisinin derivatives are relatively ineffective against *Plasmodium falciparum* infecting α-thalassemic erythrocytes, (Hb H and Hb H/Hb CS), as compared with those infecting genetically normal erythrocytes. The pharmacokinetics of artemisinin in thalassemic patients should be studied. The study was designed to compare the pharmacokinetic parameters between thalassemics and normal individuals. Ten normal subjects (7 male and 3 female) and ten thalassemic subjects (4 males and 6 females) were included in this study. None of the subjects had received splenectomy and/or blood transfusion for at least three months prior to blood collection. All subjects received a single intravenous injection of artesunate (2.4 mg/kg BW). Blood samples were collected before and after drug administration at 15, 30, 45, 60, 180, 360 min. Plasma was separated by centrifuge and kept at -70°C for further analysis. Concentrations of artesunate and its active metabolites in plasma were measured by bioassay and expressed relative to those of dihydroartemisinin, the major biologically active metabolite. The antimalarial kinetics were determined and analysed using computer software. The results showed that <u>in</u> <u>vivo</u> antimalarial kinetic of artesunate in α-thalassemic patients is different from that in normal subjects. Higher concentration of artesunate was found in thalassemic patients than in normal individuals. Therefore, dosing regimens given to infected thalassemics should be different from those given to infected normal individuals.