RELATIONSHIP BETWEEN CAFFEINE CONCENTRATIONS IN SERUM AND SALIVA IN NORMAL VOLUNTEERS.

Phavichitr N*, Poovorawan Y**, Itthipanichpong C*.

* Department of Pharmacology, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand.
* * Department of Pediatrics, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand.

The objectives of this research work are to study the relationship between caffeine concentrations in serum and saliva and the pharmacokinetic profiles of caffeine in ten normal Thai volunteers after drinking 2.5 grams of coffee (equivalent to 86.96 mg of caffeine). Blood and saliva samples were collected at 30 minutes and 1, 2, 4, 6, 8, 24 hours, respectively after coffee drinking. Analysis of serum caffeine and saliva caffeine were performed by using HPLC technique. The result showed good correlation between caffeine concentrations in serum and saliva after 1 hour of caffeine administration ($r = 0.9196$). The mean time to reach peak concentration ($T_{\text{max}}$) was $1.35 \pm 1.00$ hours for serum caffeine and $0.65 \pm 0.2415$ hour for salivary caffeine. The elimination half-life of caffeine in serum was $7.4150 \pm 2.1877$ hours and in saliva was $9.112 \pm 4.287$ hours, but there were no statistically significant difference between them. We conclude that saliva sampling could serve as a useful and non-invasive technique for determining the caffeine concentrations instead of blood sampling.