

CHAPTER 1

Introduction

Carbamazepine (CBZ) is one of the most widely used antiepileptic drugs. It is used for generalized tonic-clonic seizure (grand mal), mixed seizure patterns or other partial or generalized seizures, trigeminal neuralgia, management of alcohol, cocaine and benzodiazepine withdrawal, diabetes insipidus and schizophrenia.⁽¹⁾ CBZ has a narrow margin of safety between effective and toxic concentrations (4-12 mcg/ml),⁽²⁾ minor and major toxicities such as dizziness, ataxia, drowsiness, stupor, nausea, vomiting, agitation, involuntary movement, adiadochokinesis, abnormal reflexes, mydriasis, nystagmus, urinary retention, coma, EEG may show dysrhythmias.⁽³⁾ CBZ can induce liver microsomal enzymes (cytochrome P 450) and thus may accelerate its own metabolism (autoinduction) and the relationship between an administered dose and serum concentrations of CBZ may be unpredictable because of differences in inter-individuals.⁽⁴⁾

Therapeutic drug monitoring is particularly useful in the management of patients. Numerous investigators have suggested that saliva be used as an alternative body fluid for the therapeutic drug monitoring (TDM). One of the important advantages of saliva monitoring is easy of collection, convenient, does not require skilled personnel. Because the procedure is safe and painless, these advantages are particularly beneficial for many pediatric patients, geriatric patients, obese patients, patients who fear having blood drawn, and for others who simply have poor venous access.⁽⁴⁻⁶⁾

Many investigators have reported close linear relationships between serum/plasma concentrations and saliva concentrations for CBZ.⁽⁶⁻¹⁰⁾ But the evaluation of salivary therapeutic drug monitoring of CBZ (STDm) in Thai patients has not been fully assessed, and further studies are required.

Objectives

1. To investigate the correlation between the plasma and saliva CBZ concentration in the patients, who have got CBZ therapy.
2. To evaluate the use of saliva CBZ concentration to predict the plasma CBZ concentration for therapeutic drug monitoring in the patients.

มหาวิทยาลัยเชียงใหม่
Chiang Mai University