



## OP7

### Phenytoin intoxication in a patient taking therapeutic dose for postoperative seizure prophylaxis — CYP2C9 genetic polymorphism

Dr. Warisa Prasertsup<sup>1</sup>

<sup>1</sup>Siriraj Poison Center, Department of Preventive and Social Medicine Siriraj Hospital, Mahidol University, Thailand

#### Objective

In Thailand, phenytoin is commonly prescribed to patients undergoing craniotomy to prevent postoperative seizures. We present a rare case of phenytoin toxicity resulting from a CYP2C9 polymorphism.

#### Case report

A 58-year-old Thai woman presented to an outpatient clinic with a two-day history of nausea, vomiting, and dizziness. She underwent a craniotomy and tumor removal two weeks ago after being diagnosed with tuberculoma sellae meningioma. Following surgery, she was prescribed 300 mg of phenytoin each day to prevent seizures. During the physical examination, ataxia, horizontal nystagmus, and cerebellar abnormalities were observed. The brain imaging results were unremarkable. Her initial plasma levels of phenytoin was 58.85 mg/L. Omeprazole was the sole recognized drug interaction, however it was highly unlikely to account for the condition. A pharmacogenetic analysis of CYP2C9 identified CYP2C9\*3/\*3 polymorphisms, which are indicative of poor drug metabolism and can decrease phenytoin metabolism by 50%. This patient was administered repeated dosages of activated charcoal over the course of two days. Her symptoms eventually subsided as the phenytoin levels dropped to 29.51 mg/L.

#### Conclusion

Polymorphism of CYP2C9 should be suspected in patients with phenytoin intoxication in the absence of overdose history or drug-drug interaction. In such a circumstance, phenytoin dosage should be lowered and constantly monitored.