

**UNIVERSITI TEKNOLOGI MARA**

**PHARMACOKINETIC PROFILES AMONG OBESE  
AND NON-OBESE PATIENTS ON VALPROATE  
ACID IN HOSPITAL TENGKU AMPUAN  
RAHIMAH: A RETROSPECTIVE EVALUATION**

**NURUL HUSNA BINTI SODRI**

**Master in Clinical Pharmacy**

January 2017

## AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This dissertation has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

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Name of Student : Nurul Husna Binti Sodri

Student's I.D. No. : 2015454858

Programme : Master in Clinical Pharmacy

Faculty : Pharmacy

Dissertation Title : Pharmacokinetic profiles among obese and non-obese patients on Valproate Acid in Hospital Tengku Ampuan Rahimah, Klang: A Retrospective Evaluation

Signature of Student : .....

Date : 10<sup>th</sup> February 2017

## ABSTRACT

Valproic acid (VPA) is the most commonly used antiepileptic drug (AED) in Malaysia. However, studies on pharmacokinetic profiles of VPA in obese epileptic population are limited. Thus, a retrospective analysis study was conducted to evaluate the pharmacokinetic profiles' differences between obese and non-obese adult patients taking VPA monotherapy. The study also evaluated the relationship between the total body weight (TBW) and ideal body weight (IBW) and the VPA clearance (CL). A total of 224 samples from the routinely collected data in Hospital Tengku Ampuan Rahimah Klang a tertiary hospital were analysed, with 109 samples grouped as obese patients and 115 as non-obese. A regression analysis was also performed in order to characterize the patient's factors which influence VPA CL. The pharmacokinetic profiles of VPA were statistically significant difference between the two groups ( $p < 0.05$ ). TBW and IBW were found to have the similar strength of relationship in determining the VPA CL and dosing regimen. The regression model for VPA CL in study population included TBW (kg) and daily dose (mg/kg/day) as factors that have significant influence. The final model was as follows:  $CL \text{ (L/hr)} = (0.005 * TBW) + (0.018 * \text{daily dose}) - 0.001$ . In conclusion, this study demonstrated significant differences in VPA pharmacokinetic profiles between obese and non-obese patients. TBW or IBW can be used in determining the dosing regimen and the estimation of VPA CL in obese patients.

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